Vol. 121, No. 18

PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.

November 1, 1945

Waste Material Dealers Meet in Chicago

Waste Paper Group Takes Important Part in Annual Meeting of National Association of Waste Material Dealers—Expect Increasing Consumption of Paper Stock—Salesmen Back from Service.

CHICAGO, Ill., October 29, 1945—The waste paper industry played an important role in the deliberations of the National Association of Waste Material Dealers, Inc., now holding their annual meeting in Chicago at the Hotel Sherman. A bright future for the industry was indicated although conditions in other waste material lines were not pictured nearly as good.

In a forum meeting on waste paper, Edgerton Throckmorton, Container Corporation of America, said that while it is impssible to tell what future possibilities are, the industries served by paperboard are all rapidly-growing industries. The largest of these, he pointed out, is the packaging industry which is still far below the saturation point. Mr. Throckmorton added that the tendency toward higher wages would bring about higher costs of distribution which can be best combated by more prepackaging of merchandise.

More merchandise will be packaged for consumer delivery in the factory and less will be packaged in the retail store, according to the Container representative. This will involve an increased demand for paperboard containers and adds to the obvious trend in our social and economic structure toward greater needs for packaging materials.

In commenting on waste paper, Mr. Throckmorton said the danger is that collections will dip to the normal level, whereas they should stay at or above the present basis. He said that there is a limit to the amount of new wood pulp which can be produced economically and the one apparent answer to this question is to increase permanently the percentage of paper and board that can be reclaimed as paper stock.

He warned that as far as the immediate future is concerned it will take time to erect new pulp producing facilities and there is every probability that the demand for paper stock will exceed the ability to supply it. He said that boards made from paper stock will be more competitive than ever before, with boards made from new pulp, and the urgent need of the future is not only to "maintain the rate of collection, but to increase it just as much as possible."

The Container executive said that the slightly less than 7,000,000 tons of paper stock that entered consumption in 1944 was only 35 per cent of the new total supply and only about 40% of the new domestic supply. In the last year the paperboard industry produced about 8,000,000 tons, exclusive of building boards, running everything that they could and barely squeezing by with enough waste paper through all kinds of patriotic drives.

Other comments on the panel indicated that one of the big worries of the waste paper industry is that of keeping waste paper collections up to nearly wartime "normal" by ordinary routine commercial measures. There seems to be a growing belief that a continuation of outside voluntary help and publicizing of the seriousness of the shortage is necessary.

Salesmen Swap News Items

The western division of the Salesmens Association of the Paper Industry held only a round table session on Monday noon, October 22, but came up with a lot of personal items of real interest. For example "Red" Neblett reported that Jack Overton of the Standard Paper Manufacturing Company, was now discharged from the armed services and is resting up at his home in Richmond, Virginia, preparatory to re-entering the paper game. Gus Hurlburt, Chicago representative of the District of Columbia Paper Mills, Inc., celebrated his fiftieth birthday anniversary on October 23 and received the plaudits and best wishes of the SAPEYES. Col. Dan Hardt is reported to have been discharged from the Army and is now at his home in Neenah, Wisconsin. Colonel Hardt was stationed in this area—had a lot to do with transportation of supplies through the middle west. Ed Edwards is vacationing and enjoying his time renewing his acquaintance with his son who is now home from the Navy on a furlough. Bob Anderson, Crocker-Burbank representative in the Chicago territory, is enjoying a visit with his son who is now on terminal leave with his Navy discharge slated for early in November. The son has been on **submarine duty.**

And with all this news, the SAPEYES found time to discuss market conditions with the usual conclusions as to the uncertainties ahead.

To Retain Paper Advisory Groups

WASHINGTON, D. C., October 29, 1945—When War Production Board becomes Civilian Production Administration November 3, 176 key industry advisory committees will be retained.

Among them will be; gum naval stores; natural resins importers; eastern pulpwood; overall paper; pulp and paper industry chlorine; pulp, paper and paperboard industry transportation, and West Coast pulpwood.

News of the Wisconsin Paper Industry

Universal Paper Co. Plans to Erect New Building—Kress Tells How Belgium Coal Aids Paper Output in Europe—Stevens Point Accepts Mead Offer—Public Safety Meeting to Open at Menasha.

APPLETON, Wis., October 29, 1945—The Universal Paper Company, Appleton, Wis., is planning to erect a factory building at an estimated cost of $50,000, it was announced last week by E. J. Schrage, president.

The 90 by 145 foot structure will house two private offices, a main office and a warehouse for paper stock. The company is primarily a paper jobbing concern.

General erection contract has been awarded to Hoffman Construction Company, Appleton. Allen Koehler and Steffes, Appleton, are the architects.

Belgium Coal Aids Paper Output in Europe

The cooperation of Belgium by providing 8,000 tons of coal per month plus the pulp on hand, with the assurance of replacement later, made possible the setting up of paper production in Europe, Dr. Otto Kress, executive director of the Institute of Paper Chemistry, Appleton, Wis., told the Neenah, Wis., Kiwanis club October 24 at the Valley Inn in the latter city.

Dr. Kress, with Ernst Mahler, executive vice-president of Kimberly-Clark Corporation, Neenah, and other paper industry executives, went to Europe early this year to determine if paper production could be started in Europe for the military. He pointed out that the need for coal provided the awkward situation, as France refused to grant any coal. Belgium, however, was extremely cooperative. Germany had far more raw materials for paper production than had been believed, Dr. Kress said as he told how some of the necessary raw materials were taken from Germany. The large supply of raw materials, he added, was made possible largely through domination of Norway and much of Sweden.

Public Safety Meeting Opens at Menasha

Clyde R. Powell, who has been termed one of America's outstanding industrial psychologists, will be the principal speaker at the first public safety meeting of the season, at Menasha High School, Menasha, Wis., Thursday evening, November 1, according to the Twin City Safety Council, which is sponsoring the address.

Mr. Powell is safety personnel director for the Endicott-Johnson Company, Endicott, N. Y. He is a hypnotist and magician, and will incorporate the latter skills as illustrations in his talk.

The council has planned three general meetings for the 1945-46 season, in addition to its monthly foremen's sessions.

Kimberly-Clark Sets Up New Safety Order

The Royal Order of the White Elephant has been instituted at the Kimberly, Wis., mill of the Kimberly-Clark Corporation. Any lost-time accident will bring three members into the order—the superintendent in charge of the department, the foreman and the worker suffering the accident. In the event of an accident in another department the superintendent of the first department, acting as maharaja, presents the unwanted symbols to the superintendent of the department having the latest accident. Sixty days without an accident would bring the elephant into the office of the mill manager.

The mill now has a contest underway. It started August 1 and will continue until January 1, 1946.

Menasha Erecting New Corrugator Bulding

The Menasha Woodenware Company, Menasha, Wis., will complete its new building to house a new corrugator machine by the middle of December, it was announced last week. The structure is a one-story building, 32 by 377 feet, with an L-shaped wing joining to the remodeled storehouse and the present corrugator building.

The building to house the new machine is constructed of concrete and steel and has an exterior of red brick. White glazed tile bricks lining the inner wall of the structure have been installed as a sanitary factor, since many of the boxes manufactured by the concern are used for food containers and sanitary products.

Double cut-off knives will be part of the equipment of the new corrugator machine, which will be 85 inches wide in comparison with the present 72-inch width.

Because the corrugator will double production of corrugated boxes, the present building housing the machine now in use and the building north of it will be used to double paper storage, in order that the inventory of paper on hand is sufficient for the new machine.

Between the new building and the present roll storage house, another roll storage house will be constructed in order to double the storage capacity of the large paper rolls. The structure will be of brick and steel, and the overhead crane will be extended to serve both houses and will be used to drop the paper rolls down into a gravity roll trough in the new plant. A railway track is to run between the two roll storages and up to the corrugator, serving all three buildings.

The new corrugator should be installed by February, according to officials. At that time the present corrugator, equipped with only a single cut-off, will be shipped to a company mill at Durham, N. C.

The wing will be 32 by 118. A two-story structure, the top floor will house the box department offices, which will include a large office for the superintendent as well as other offices.

The warehouse has been remodeled, modernized and fireproofed. The company plans to use the present corrugator plant as a finishing department.

Stevens Point Accepts Mead Offer

The Stevens Point, Wis., common council voted unanimously on October 23 to accept an offer by George W. Mead, Wisconsin Rapids, Wis., in behalf of the Consolidated Water Power and Paper Company, of which he is president, to deed to the city for park purposes land bordering both sides of the Wisconsin river at Stevens Point. The council adopted an ordinance creating a board of park commissioners. The city will improve the land and convert it into riverside park areas.

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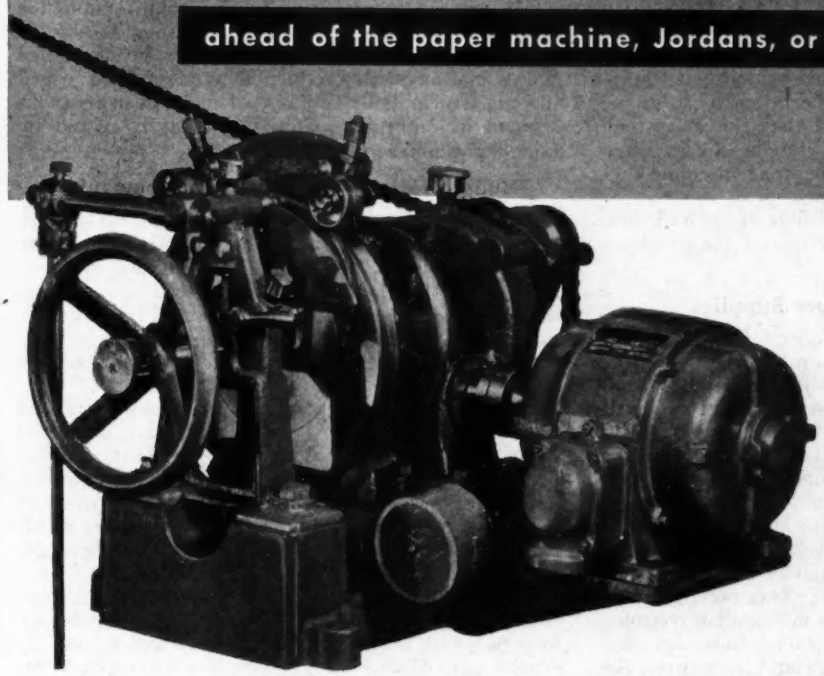

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Quebec Mills Plan to Vary Output

Producers Consider Longer Profits On Specialty Lines—Consumers Fear Drain of Newsprint To United States Under New Policy—Tax Revisions Favor Private Enterprise—Call for Woodsmen

MONTREAL, Que., October 22, 1945—Some peculiar developments in the newsprint industry are being discussed in the papers here. Altogether apart from the far-reaching effects of the war, it is conceded that one of the outstanding features of the changes in the industry over the past few years has resulted from the fact that a number of American companies have either gone out of the manufacture of newsprint entirely or are devoting a much smaller proportion of their production to newsprint. The same change has been observed on a smaller scale in Canada, where several companies have been steadily working towards diversification of their products.

The reason for this change is that manufacturers have found that they could go into other lines and make a considerably larger profit than they could in newsprint, and reports here are that some of the American companies have been forced to do so in view of the steadily mounting costs with which they have been confronted. It is stated that as a result the newsprint industry is finding it increasingly difficult to meet the demand of the newspapers in the United States and Canada, and that for some time past it has been felt by people close to the industry that something would have to be done in connection with the price to be paid for newsprint in order to make it possible for higher cost mills to get back into production again and help solve one of the problems of the post-war period.

Apprehensive on Paper Supplies

One feature of the recent federal budget is that the excess profits tax limitation on advertising expenditures will be removed as from January 1, 1946, and that as a result newspapers are expecting a much larger volume of advertising in the coming year, with consequent enlargement of newspapers and greater call for newsprint. This development, following the announcement of the newsprint administrator last week of the decision to discontinue allocation of newsprint to markets outside of Canada, has caused some apprehension to be expressed among newsprint consumers with regard to supplies. This notwithstanding the fact that mill allocation for Canadian consumers is being retained, and the official statement that Canadian newsprint consumers would be assured the tonnage currently available to them.

The reason for the apprehension is the likelihood that with curbs on exports eliminated and the ceiling on newsprint selling price to Canadian consumers in effect, mills here may be able to negotiate a higher selling price to U. S. consumers and curtail domestic shipments in order to take advantage of the higher price in the big market across the border, where, incidentally, they are already benefiting from the premium on the U. S. dollar.

From the point of view of Canadian consumers, the situation is brightened to some extent by the announced decision of the United Kingdom Government to reduce projected imports of newsprint into Great Britain from Canada and Newfoundland during 1946 by about 75 per cent. This would mean a cut of about 175,000 tons in Canadian and Newfoundland shipments to the United Kingdom, a figure which closely approximates recent annual consumption in Canada, shipments to domestic consumers having been 187,227 tons in 1944, as compared with 202,536 tons in 1942. Fears are reported to be entertained among Canadian publishers, however, that, in view of possible developments in the newspaper field in the United States, the stock made available by the British Government's action will be inadequate to protect Canadian consumers against loss of some portion of their requirements. With this in mind, they are said to be looking hopefully towards Ottawa for consideration being given to an upward revision in the ceiling price on newsprint.

Difficulties in the way of Canadian mills increasing production to any considerable extent are a factor in the situation. Woods operations continue to be restricted by shortage of labor, and despite efforts of the pulp and paper industry and federal and provincial governments to bring more manpower into the woods, the outlook for the coming winter is not too encouraging. A rising trend of demand in the United States market, with production more or less pegged in Canadian mills by shortage of manpower and consequent lack of raw material is what is feared by Canadian publishers.

Budget Helps Pulp and Paper Companies

That the tax revisions announced in the Budget are considered as likely to act as an incentive to private enterprise and to assist materially in post-war rehabilitation, has been given ample testimony during the past week on the stock markets, and in particular in respect to the securities of pulp and paper companies, which have continued their leadership of the market evidence during the past few months. Continued demand for pulp and paper shares have moved the index for the group from the year's low of 178.99 to an eight-year high of about 246. Turnover has been fairly heavy. The present high of 246 for the index is still well below the all-time high recorded in 1937, however, when a high of 374.69 was recorded. The lowest touched by the index was on June 22, 1935, when it dropped to 24.21.

The effect on company earnings of reducing the excess profits tax from 100% (with 20% refundable) to 60% (with no refundable portion) will be considerable, especially as the industry has no reconversion problems and has an assured market for all it can produce. Another favorable factor is that the pulp and paper and lumber industries will benefit from the special feature which provides that companies can write off against properties held, or carry back to previous years, unamortized capital invested in properties which have had to be abandoned by reason of fire, flood or insect damage.

Call for Woodsmen

Declaring that "Canada's woods are calling for men and more men," the federal Department of Labor has large advertisements in the local papers stating that 12,000 jobs are immediately available in Quebec's forests. Men may be assured, the advertisement says, of a healthy outdoor life, group activity, and steady employment, with an opportunity to save money at maximum wages.

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Canadian Newsprint Industry Plans Ahead

Removal of Restrictions Now Permits Newsprint Manufacturers to Increase Output as Much as Desired—Adequate Labor Force in Mills and Woods Uncertain—Many Mills Need New Equipment.

TORONTO, Ont., October 29, 1945—With all production restrictions removed for the first time in the past decade, Canadian newsprint companies are planning for a very active year in 1946. With mills allowed to produce as much as they can, there is likely to be a rush by each company to get as many men as possible into the woods to increase the supply of pulpwood as well as to train new men for the added machine capacity.

During the period in which Ontario and Quebec mills (except a few privately owned) were required to operate at a percentage level corresponding to that of all mills, (that is prior to 1942, when the government took over control of the industry as a war measure) there was little incentive to price cutting in bad times or to keen bidding for labor in good times. The same applied to the later period under government control.

Adequate Labor Force Uncertain

The pulp and paper industry at the moment isn't very sanguine about a big movement of men from industrial centers back to the woods this coming winter. Men who have been getting relatively high wages at war plants remain reluctant to accept lower pay for work in the woods, and many may continue to collect on their unemployment insurance and hope for another city job. Some labor union officials are reported as agitating for manufacturing work (government subsidized or otherwise) and discouraging return of men to the woods. The outlook for increased workers for the woods appears to be best in the Province of Quebec, where the bulk of woods labor consists of French-Canadian farmers who turn to lumbering after the harvest season is over. In addition, many of the war plants now closed, or to be closed, were centered in Quebec province, not far from pulpwood areas.

Higher Prices and New Equipment Needed

Prices may have to be increased. Decisions are now largely a matter for Washington authorities, who control price levels in Canada's chief newsprint market. An unfavorable factor is the present difficulty of newsprint producers getting new equipment. Machine replacements have been deferred during the war and many mills now have equipment that should be modernized or replaced to assure efficient production. Manufacturers are being advised that they must not hope for new equipment during 1946.

Larger Newsprint Expected in 1946

Superficially, it would appear that Canada's newsprint production would be increased next year even if there is no increase in pulpwood supply. It is possible, though by no means certain. Some machines switched by government order from newsprint to other items, will return to newsprint production. The decision of the United Kingdom to take 25% of its requirements of newsprint, instead of cutting off all importations, has cheered Canadian newsprint industry because although Canadian mills can sell elsewhere all they can produce during the next couple of years, they naturally want to retain their former customers against the day when the sales picture might be different. The insistence of the government that Canadian newsprint users be assured of the same percentage of supplies they have been obtaining, as a condition of the revoking of all controls at the end of the present year, will meet with no opposition. It is generally agreed that the domestic market is entitled to a full share of newsprint available during both good and bad times, war or peace.

Decora Readies Its New Plant

FORT EDWARDS, N. Y., October 27, 1945—The Decora Corp., which recently leased the plant of the Amalgamated Paper Corp., has started the installation of equipment which will allow the reconversion to production and processing of paper for civilian demand. The company recently completed a large order for the government but production on the new contracts will not be started until the first part of November. An official of the concern stated that the building of two coating machines has been completed and a rotogravure machine is expected to be finished soon. Much time has been spent in remodeling the property since the firm took possession a few months ago but prospects for capacity production are now excellent.

The contract recently completed for the army consisted of paper and cloth-backed foil, a vapor-barrier product used in wrapping radar, rations and other army goods for protection against moisture. The paper to be coated at the plant following reconversion is an adhesive, moisture-proof product which will be used for linings of packages and other purposes.

Behr-Manning Starts New Buildings

WATERVLIET, N. Y., October 27, 1945—The Behr-Manning Corp. has launched an extensive expansion program which calls for the erection of several new additions. Construction has already started on a new research building, a cafeteria, and a new warehouse. An official stated that the planned expansion had been mapped in view of an anticipated increase in demand for sandpaper products and also to speed the release of a new product, electrocoated fabrics. The new research structure will be several times larger than the pre-war laboratory and will specialize in the study of improved products, new products and methods. Adjoining this structure is a larger one which is to be converted for use as an experimental plant. The new warehouse will provide 10,000 square feet of storage for cloth and paper backings, abrasives and adhesives.

Harrington Joins Decotone

HOLYOKE, Mass., October 26, 1945—John P. Harrington, for 12 years with the American Tissue Mills, has joined the Decotone Products Division of the Fitchburg Paper Company. He will be in charge of the sale and development of decorated and surface treated papers produced by that division.

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Standard—Lump; Ground 99% thru 8 mesh, 95% thru 10 mesh; Powdered 95% thru 100 mesh.

Iron Free—Lump approx. 2½"; Ground thru 8 mesh.

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Solutions: from 38°—60° Baume. Wt. Ratio (Na_2O to SiO_2) from 1:2.00—1:3.40.

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Scandinavia Is Ready for Recovery

O. F. Swanson Finds Pulp and Paper Industry in Sweden and Norway Mostly in Sound Condition and Ready to Ship in Large Tonnage When Price Ceilings Permit—Coal Situation Serious

By O. F. Swanson, Gen. Mgr., Andersen & Co., and Vice-Pres., Pulp & Paper Trading Co.

For more than a quarter of a century, I have had the privilege of writing the annual review on woodpulp in the Convention Numbers of the PAPER TRADE JOURNAL, New York, and it never occurred to me that some day, I might reap some benefit from it. However, during my recent trip to Europe, I discovered that my opinion in the matter was wrong because almost everyone I came in contact with, acted as though they knew me and were all not only friendly but eager to be of assistance.

Paper Situation in England Improving

After having discussed the paper and pulp situation in Britain with my good friend, Mr. Adams of the Paper Trade Review, Mr. Edward Holmes and other gentlemen well versed in these industries, I am happy to report that much progress has already been made. The size of the newspapers has been increased, and the quality of all kinds of paper made in England is rapidly approaching pre-war standards. In addition to American and Canadian wood pulp, a sizable tonnage has recently been received from Sweden, and I understand a lesser tonnage from Finland. I look forward to shipments from Norway within the not too distant future. I also expect early restoration of world-wide trading on a large scale by the British. From Croyden, we flew over Denmark to Goteborg, Sweden.

The next day, I left for Norway but called on several paper and pulp mills in Sweden on my way to that country. Some of them were rather old, but all appeared to be in good working condition.

Norwegian Mills in Good Condition

The Norwegian Mills I visited were also in tip-top shape and some of them had installed new equipment during the war, and were in excellent shape. They had plenty of coal, but not enough pulpwood to operate at full capacity. Prior to the War, I was told that Norway paid about kr. 25 per ton for English coal, of high quality, and that the price today is kr. 80 per ton for coal of inferior quality.

The price on pulpwood, as well as on chemicals has also more than doubled; hence, it is impossible for Norwegian pulp manufacturers to sell their product in the U.S.A. at O.P.A. ceiling prices, without entailing too great a loss for them to absorb. This, they naturally regret very much because it would be desirable to them to renew their business here, if they could only afford it. These good people have been hit hard by the War, and the German occupation practically bled them white. Nevertheless, don't worry too much about the destiny of Norway because a country made up of the kind of people Norway has might be down, but never out. Naturally, they have suffered a great deal at the hands of the Germans but their spirit was never broken, nor even seriously impaired. Like Sweden, I believe Norway must eventually reduce the cost of manufacturing but, for the time being, the chances of doing so are very remote indeed.

When I returned to Sweden, I resumed my study of the pulp and paper situation there by visiting mills all over the country. With the exception of a few pulp mills in the southern part of the country, which are just about through manufacturing pulp for sale in the U.S.A., other mills were in excellent condition. A few rather antiquated pulp mills have already been closed down, and are being dismantled. There is, however, sufficient wood left in the South of Sweden to provide for a limited production for several years to come. The pulp mills in the middle of Sweden are still going fairly strong but Norrland (north land) is where the large and modern pulp mills are located, and most of them are in better condition than before the war. Quite a few are also making a better pulp than ever before and the rest have at least maintained their former qualities.

Coal Situation is Serious

The coal situation is serious and, as a consequence, large dams and power stations are being built for the purpose of supplying enough electricity to make the mills independent of coal in the future. Wood is used for fuel at the present, and this might be a blessing in disguise, because the forests have been cleaned up by removing the saplings, small trees and underbrush. This ought to give the other and more important trees a chance to breathe, and grow faster, and should also reduce the fire hazard. I travelled through hundreds of miles of beautiful forests, and gained the impression that there will always be plenty of wood in Sweden and Finland.

Price is Factor in Pulp Tonnage

Several pulp manufacturers claimed that they cannot afford to sell pulp in the U.S.A. at O.P.A. ceiling prices, but would be glad to do so if higher prices could be obtained. In reply to my question as to the approximate increase in tonnage that would become available for the U.S.A. if higher prices for their products could be obtained, I was informed that it was almost impossible to give a definite figure, but they estimated that the increase would amount to about 50%. They, like the Norwegians, and Finns, are also very anxious to regain their former American customers, and promised to do their best to accomplish this. I have not attempted to paint rosy pictures of conditions in the parts of Europe I visited but, on the other hand, as I have no grouch against those entrusted with the responsibilities of restoring trade relations of the world, nothing would be gained by emphasizing the imaginary importance of disagreeable features. Better try to forget them as quickly as possible.

Federated Mills Resumes Full Week

BECKET, Mass., October 26, 1945—The Federated Mills located in the Bancroft section, makers of fine tissues, has resumed a six-day week operation and given its employes a 12-cents per hour raise.

ALPHA* PROTEIN

Glidden's chemically-isolated pure protein, made from the soybean, now available in reasonable quantities.

Used in the paper industry for Prosize (beater sizing) tub and calender sizing and as an adhesive for use in the manufacture of coated paper and paperboard.

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FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending October 27, 1945

STOCKS

	High	Low	Last
A. P. W.	7¾	6⅞	7⅛
Armstrong Cork Co.	56½	54	56
Celotex Corp.	20	18⅞	20
Celotex Corp., pf.	21	20⅝	21
Certain-Teed Products Corp.	15⅛	13⅝	15
Certain-Teed Products Corp., pf.	108½	108½	108½
Champion Paper & Fibre Co.	44	42¾	44
Champion Paper & Fibre Co., pf.	110	109¾	110
Congoleum Nairn Co.	36⅛	34¾	35⅛
Container Corp. of America	36¾	35	35¼
Continental-Diamond Fibre Co.	15	14⅛	15
Crown-Zellerbach Co.	28⅞	26	28½
Crown-Zellerbach Co., pf.	117½	116	117
Dixie Cup Co.	37¾	36½	37¾
Dixie Cup Co.,—A	50	48½	50
Flintkote Co.	32½	31¾	32⅛
Flintkote Co., pf.	109½	109	109¼
Robert Gair	8½	7½	8½
Robert Gair, pf.	19⅜	18¾	19¼
International Paper Co.	40½	32⅞	40¾
International Paper Co., pf.	112½	105⅝	111
Johns-Manville Corp.	141¾	137	140¾
Johns-Manville Corp., pf.	131	131	131
Kimberly-Clark Corp.	54¼	54⅛	54⅛
Mac Andrews & Forbes	35¾	35½	35½
Mac Andrews & Forbes, pf.	153½	153½	153½
Masonite Corp.	53	50¾	52⅛
Mead Corp.	20¾	18½	20¾
Mead Corp., pf. A—6%	107½	106¼	107½
Mead Corp., pf. B—5½%	106	105	105
National Container Corp.	22¾	22⅛	22½
Paraffine Companies, Inc.	74¾	73	73
Paraffine Companies, Inc., pf.	...	...	...
Rayonier, Inc.	23½	22¼	23⅛
Rayonier, Inc., pf.	38	37¼	37½
Ruberoid Co.	48	45½	47
Scott Paper Co.	56¾	55¾	56
Scott Paper Co., pf.	111½	111	111½
Sutherland Paper Co.	40¼	39	40
Union Bag & Paper Corp.	24¾	21⅜	24⅝
United Paperboard Co.	9¼	8¾	9¼
U. S. Gypsum Co.	107¾	103¼	103¼
U. S. Gypsum Co., pf.	...	...	...
West Virginia Pulp & Paper Co.	35⅞	33	35⅜
West Virginia Pulp & Paper Co., pf.	112½	111	112½

BONDS

Abitibi Pulp & Paper Co. 5s '53	106⅞	106¾	106⅞
Celotex Corp. 3¾s '55	...	...	...
Certain-Teed Products Corp. 5½s '48	...	...	...
Champion Paper & Fibre Co. 3s '65	103⅛	102¾	103⅛
International Paper Co. 6s '55	109	107½	109
International Paper Co. 5s '47	104	103⅜	104
Mead Corp. 3½s '53	...	...	...

New York Curb Exchange

High, Low and Last for Week Ending October 27, 1945

STOCKS

	High	Low	Last
Great Northern Paper Co.	45	44½	44¾
Hummel-Ross Fibre Corp.	10¼	9⅝	10⅛
St. Regis Paper Co.	9⅜	8⅞	9⅛
St. Regis Paper Co., pf.	...	...	...
Taggart Corp.	8⅞	8⅛	8⅛

BONDS

American Writing Paper Co. 6s '61	101½	101¼	101¼

National Gypsum Profits Up

The National Gypsum Company and subsidiaries for the nine months reports net profit, after $899,000 taxes, was $809,588, equal to 43 cents each on 1,381,573 common shares, against $714,455, or 36 cents each on 1,357,454 common shares, last year, when $628,100 was provided for taxes.

Dixie Cup Nets $2.20

The Dixie Cup Company for the twelve months to September 30 reports a net profit of $932,696, or $2.40 a share of common, against $891,707, or $2.20 a common share for preceding twelve months.

Sutherland Profits Off

The Sutherland Paper Company for the nine months to September 30, reports a net profit of $368,709, or $1.28 a share, against $508,756, or $1.77 a share, last year.

St. Regis Refinances

St. Regis Paper Company has sold an issue of $15,000,000 of 3 per cent debentures dated July 1, 1945 and due July 1, 1965 to Metropolitan Life Insurance Company, John Hancock Mutual Life Insurance Company, Massachusetts Mutual Life Insurance Company, and Aetna Life Insurance Company on a basis to yield 2.90 per cent. The debentures call for a semi-annual sinking fund of $225,000.

The company has retired $8,808,000 of fifteen-year 3¾ per cent debentures due in 1949, and recently sold its controlling interest in Skenandoa Rayon Corporation which involved a capital gain of approximately $2,000,000. Proceeds of the sale of the new debentures will be used to finance expansion programs of the company and to increase working capital.

A $4,000,000 construction and expansion program at the Deferiet, New York, pulp and paper mill of the company's Printing and Publication Paper Division will make available to printers, publishers and advertisers an initial annual increase of 30,000 tons.

The new line of lighter weight super-calendered, machine finish and machine coated papers, featuring the combined advantages of brightness, cleanliness, bulk, capacity, absorbency and excellent printing qualities, will be produced through a new sodium peroxide pulp bleaching process.

Another expansion program, costing $2,000,000, has been started at the Trenton, New Jersey plant of the company's Panelyte Division. In order to meet the pressing demand for an increased volume of Panelyte molded and fabricated parts used by the refrigerator industry, Panelyte is erecting a new steam boiler plant and is constructing new buildings to house enlarged treating, varnish making, pressing, molding and shipping departments.

As previously announced, the Panelyte Division has made its fabricating plant the most modern in the industry by adding more than 60,000 square feet of floor space and new equipment assigned to mass-produce functional insulating parts for the automotive, refrigerator, radio and electrical industries.

M. & O. Earnings Rise

Donald D. Davis, president of the Minnesota and Ontario Paper Company, has announced that the consolidated net income of that Company, after provision for income and excess profits taxes, was $460,484 for the quarter ended September 30, 1945, and $989,780 for the nine months ended September 30, 1945, compared to $947,928 for the nine month's period ended September 30, 1944.

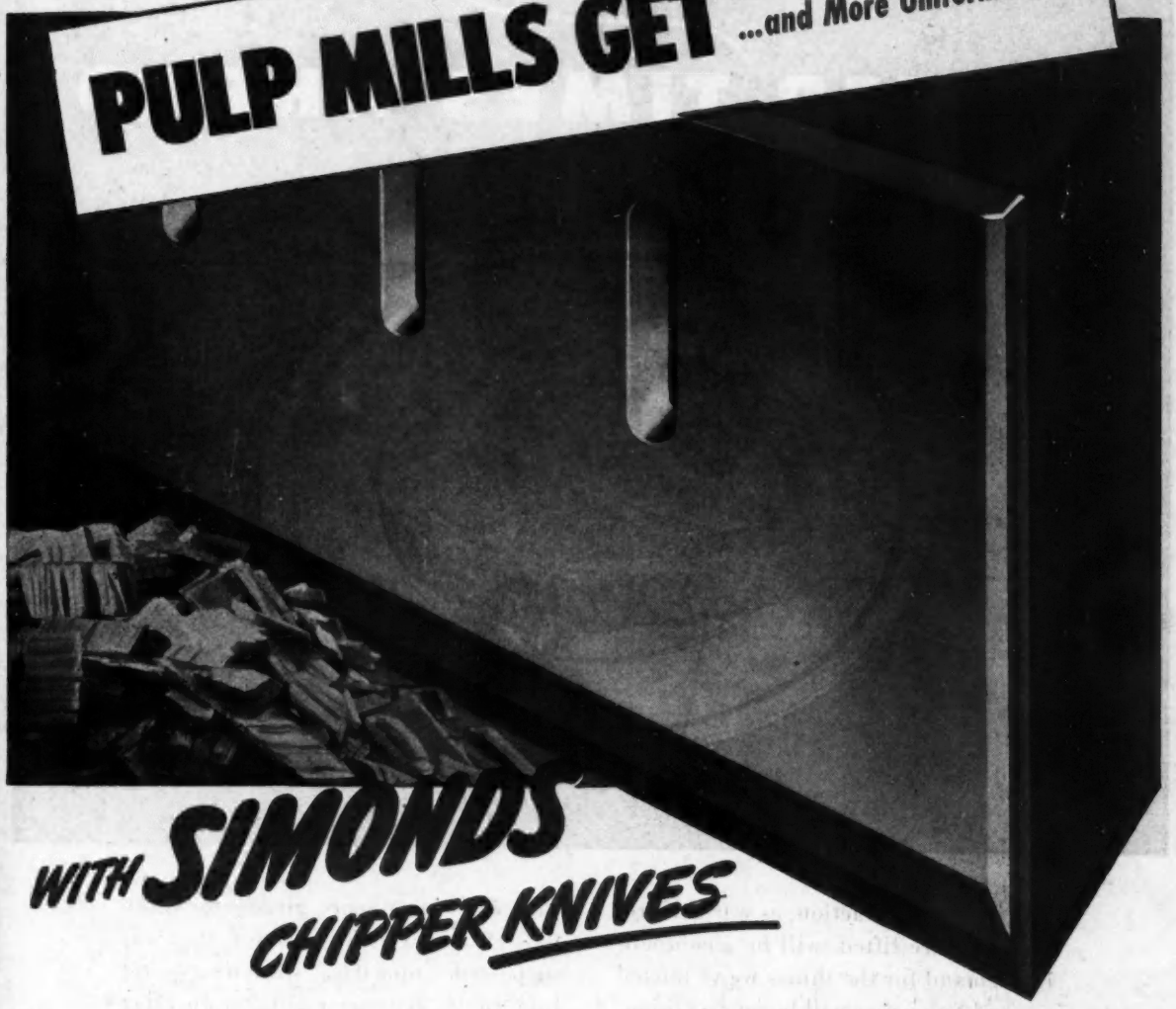
United Paperboard Profits Up

The United Paperboard Company and subsidiaries for the fiscal year ended May 31, 1945, reports a net profit of $143,974, or .39 cents per common share, compared with $98,983, or .20 cents per common share in 1944. Net sales totaled $6,022,937 in 1945, compared with $5,960,221 in 1944.

West Virginia Earns $1.39

The West Virginia Pulp and Paper Company for the nine months to July 31, reports a net profit, $1,763,215, or $1.39 a common share, against $1,747,100, or $1.38 a share for similar period of previous year.

PULP MILLS GET More Hours of Chipping ...and More Uniform Chips



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Simonds T-18 Chipper Knives are made of Simonds electric steel, to buck high speeds and heavy cuts without cracking or chipping out. They hold their extra-sharp cutting edges and give many hours more of cutting even-sized chips, than do ordinary knives. Percentage of waste is held down . . . *and so are your knife costs.* So you save in many ways.

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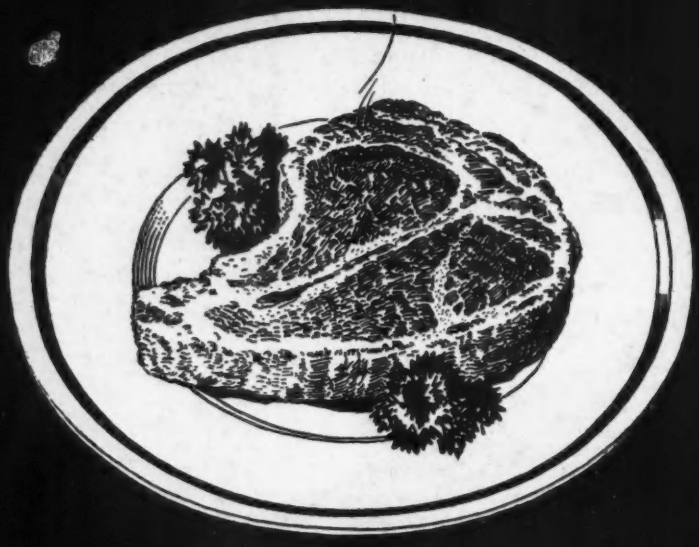
BRANCH OFFICES: 1350 Columbia Road, Boston 27, Mass.; 127 S. Green St., Chicago 7, Ill.; 228 First St., San Francisco 5, Calif.; 416 W. 8th St., Los Angeles 14, Cal.; 311 S. W. First Ave., Portland 4, Ore.; 31 W. Trent Ave., Spokane 8, Wash.

PRODUCTION TOOLS FOR CUTTING METAL, WOOD, PAPER, PLASTICS

SIMONDS SAW AND STEEL CO.

FITCHBURG, MASSACHUSETTS

BETTER TIMES AHEAD



The inevitable reaction, as war-time restrictions are lifted, will be a compelling demand for the things we've missed . . . and fine paper will be no exception.

Quality will be the watchword. Will you set the standards for OPACITY, BRIGHTNESS and WHITENESS that will satisfy a market hungry for the best?

Your plan to use TITANOX pigments in your post-war stocks is pointing you in the right direction.

TITANOX in paper means QUALITY paper! For TITANOX contributes unsurpassed opacity, whiteness and brightness, extreme resistance to after yellowing and, in tinted stocks, outstanding clarity of color . . . all with a minimum of pigment.

Plan now to use TITANOX pigments. They'll help you to keep out front in the race for business.

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U. S. Envelope Makes Promotions

SPRINGFIELD, Mass., October 27, 1945—Managers and salesmen of the United States Envelope company learned of promotions of six executives of the company and the retirement of R. L. Allison, sales manager, assistant general manager and member of the executive committee at a meeting in Hotel Highland here Thursday. The two-day gathering was opened by W. E. Swift, president of the corporation, and it also heard remarks by E. V. Johnson, first vice-president and general manager and by Frank H. Sellars, Jr., the newly named sales manager.

In the new setup of company officials Arthur F. Peterson becomes assistant general manager; Frank H. Sellars, Jr., sales manager and Eliot L. Wight is made assistant sales manager in charge of both advertising and sales promotion. The three are all officials at the Springfield division of the company. Two other promotions are in a Hartford plant and one in Worcester.

Peterson, new assistant general manager, has for the past four years been an assistant to Johnson, Prior to that he was manager of the Plimpton Manufacturing company division in Hartford. Sellars, new sales manager, has been assistant sales manager for 19 years. Wight has been advertising manager of the company for 16 years.

Harry W. Gordon, who is also appointed assistant sales manager, has been assistant manager of the Logan, Swift and Brigham Envelope Company division in Worcester for seven years.

Robert D. Allison of West Hartford becomes manager of the Plimpton Manufacturing company division in Hartford where he has been assistant manager for four years. Herbert B. Schweitzer, 11 years a salesman at the Hartford plant, is appointed assistant manager at Plimpton division.

Huyck Signs New Labor Contract

RENSSELAER, N. Y., October 27, 1945—Announcement is made by F. C. Hyck & Sons of the signing of a new labor agreement with the American Federation of Labor which affects several hundred employes. The agreement is in force for one year and under its terms the employes with a year of service are given a week's vacation with pay while those over five years are allowed two weeks. A minimum wage of sixty cents per hour after an eight-week learning period and six paid holidays are provided for in the contract as well as overtime for more than eight hours in any given day as well as hours over forty in any week.

Mosedale Returns to New York

SPRINGFIELD, Mass., October 13—Harold Mosedale has returned to the New York sales engineering staff of Package Machinery company, George A. Mohlman, company president, announced today. He will make his headquarters at the New York office. Mosedale has been affiliated with Package Machinery since 1930, working out of Springfield as director of purchases during the past four years.

Picola Retires from Gotham Companies

B. F. Picola has tendered his resignation as an officer and director, and has severed his connection with the Gotham Paper Mills, Inc., and the Gotham Tissue Corporation. The business of both these companies will be continued under the same general management.

NEPMA Retains Norman Scott

BOSTON, Mass., October 22, 1945—The New England Paper Merchants Association has named Norman E. Scott as executive-secretary with offices at 89 Broad street. Mr. Scott has just terminated several years of association with the War Production Board as Regional Chief, Pulp, Paper and Printing Section, Boston.

Previous to his association with WPB Mr. Scott had charge of sales in New England for W. C. Hamilton & Sons, Miquon, Pa., manufacturers of fine

NORMAN E. SCOTT

papers. Earlier he was sales manager for Deerfield Glassine Company, Monroe Bridge, Mass., producers of transparent wrapping papers and greeting card specialties.

With the cooperation of the National Paper Trade Association officers and facilities Mr. Scott anticipates an energetic program of assistance to the members of the Association through the free interchange of ideas and problems, clearance of all new developments and reasonably frequent contact, personal and otherwise.

Other present officers of the NEPMA are William H. Walpole, Rutter & McNaught, Inc., President; James J. Dwyer, Stone & Forsyth Company, Vice-President (Wrapping Paper Division); Paul M. Jones, Storrs & Bement Company, Vice-President (Fine Paper Division); Frank B. Cummings, Treasurer, and F. Bendel Tracy, Fort Hill Paper Company, Secretary.

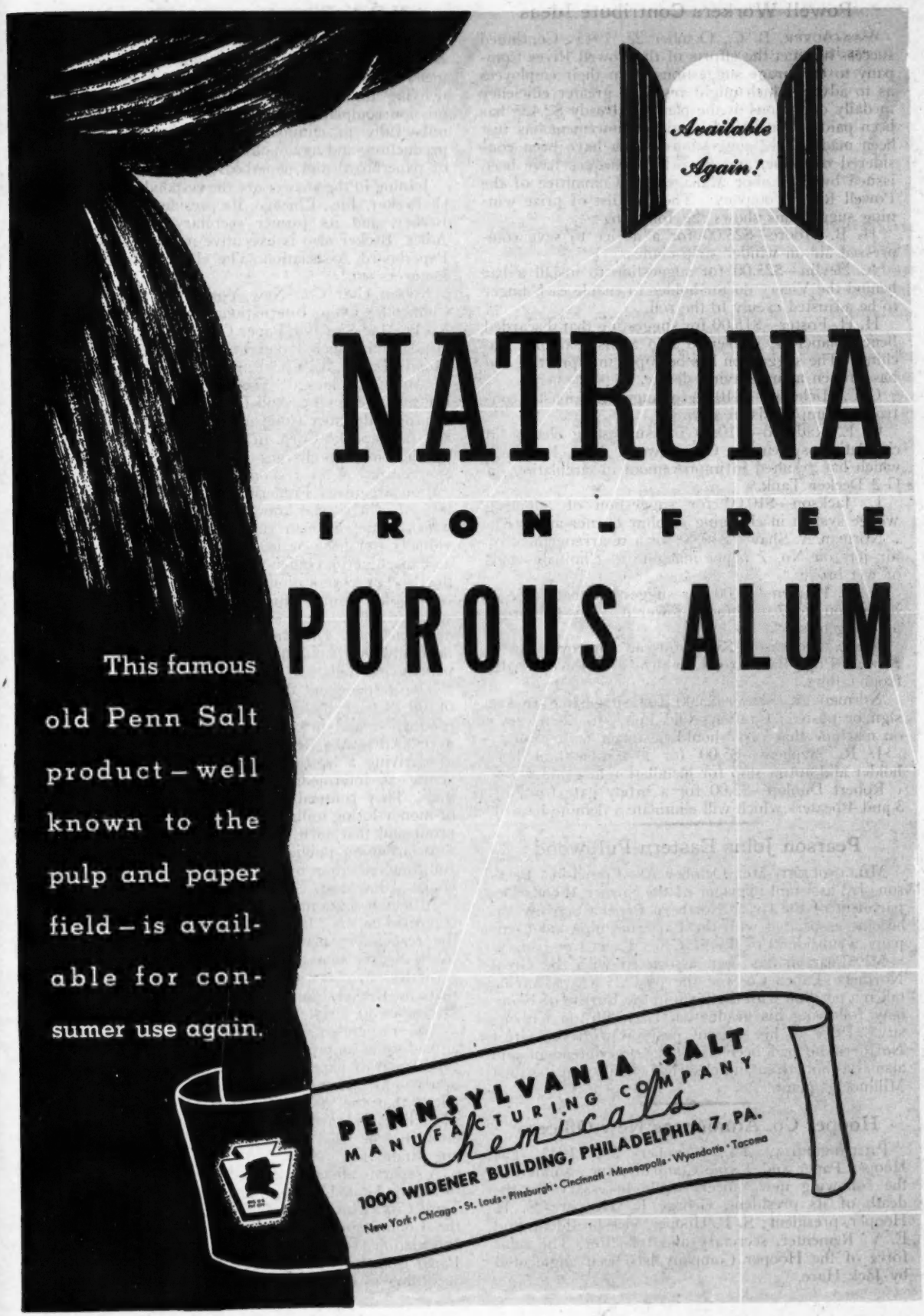
Mr. Scott will devote his entire time to the affairs of the Association.

WLB Rules on Tekoa Pay

WESTFIELD, Mass., October 20—The War Labor Board yesterday handed down a ruling that will affect the union papermakers of Tekoa lodge. Under the ruling, employes will receive time and a half for the sixth day of work, three holidays with pay and shift differentials of four cents for the afternoon shift and six cents for the night shift.

The only difference in the WLB's ruling and the employes' request is in the granting of three holidays with pay instead of six.

Representatives of the union and management have been negotiating since April.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Powell Workers Contribute Ideas

VANCOUVER, B. C., October 22, 1945—Continued success has met the efforts of the Powell River Company to encourage suggestions from their employees as to advice which might result in greater efficiency in daily operations at the plant. Already $2,425 has been paid out in awards, and announcement has just been made of 12 suggestions which have been considered of value, and for which cheques have been issued by the Labor Management Committee of the Powell River Company. The new list of prize winning suggestions shows the following:

H. B. Moore—$25.00 for a device to save compressed air on winder strip chutes.

A. Devlin—$25.00 for suggestion to install a bar behind the Vicery doctor holder to enable each finger to be adjusted evenly to the roll.

H. H. Foster—$15.00 for suggesting that discarded bench planer be converted into a disc sanding machine. The suggestion has been put into practice and has proven a time-saving device.

C. C. Mickelson—$10.00 for suggesting master control on jump skids in sawmill.

G. E. Radford—$10.00 for suggesting change in circulating system in Groundwood Nos. 1 and 2, which has resulted in improvement in circulation on G-2 Decker Tank.

L. Jackson—$10.00 for suggestion of adopting wedge system in changing sulphur burner air jets.

Norman A. Shaw—$10.00 for a re-arrangement of air jets on No. 7 paper machine to eliminate wads of wet broke.

J. W. Hurren—$5.00 for suggestion that baffle in hopper on No. 7 machine be lowered. This will prove a saving to stock.

R. L. Stevenson $5.00 for an improvement in Kamyr Pulp Bale loader, which will prevent bales from falling.

Norman A. Shaw—$5.00 for suggesting that a sign be posted "Caution—Old Felt," to warn crews on machine that care should be taken with same.

J. R. Stephens—$5.00 for a combination hose holder and apron stop for installation at grinders.

Robert Dunlop—$5.00 for a safety gate for Nos. 3 and 4 beaters which will eliminate a definite hazard.

Pearson Joins Eastern Pulpwood

MILLINOCKET, Me., October 20—Francis E. Pearson, Jr., assistant manager of the Spruce Woods Department of the Great Northern Paper Company has become associated with the Eastern Pulpwood Company, a subsidiary of the St. Croix Paper Company.

Mr. Pearson has been associated with the Great Northern Paper Co. for the past 23 years, having taken a position with that firm in the Bureau of Economy following his graduation from Boston University. Prior to his present position with the Great Northern he had been assistant superintendent and also assistant steam and electrical engineer at the East Millinocket plant.

Hooper Co. Announces New Officers

PHILADELPHIA, Pa., October 29, 1945—The Hooper Paper and Twine Company, Inc., announces the following new officers made necessary by the death of its president, George K. Hooper: E. F. Hooper, president; S. P. Hooper, vice president, and E. V. Rementer, secretary and treasurer. The sales force of the Hooper Company has been augmented by Jack Hare.

N.P.A. Files Answer to Complaint

WASHINGTON, D. C., October 29, 1945—The National Paperboard Association, and eleven of its member manufacturers have filed a joint answer denying the allegations of a Federal Trade Commission complaint charging that they have conspired unlawfully to eliminate price competition, restrict production, and monopolize the manufacture and sale of paperboard and paperboard products.

Joining in the answer are the respondents Frederick G. Becker, Inc., Chicago, its president, Frederick G. Becker, and its former secretary-treasurer, H. S. Adler. Becker also is executive manager of National Paperboard Association. The eleven member manufacturers are:

Robert Gair Co., New York; Mead Corporation, Chillicothe, Ohio; International Paper Company, New York; Mac Sim Bar Paper Company, Otsego, Mich.; Hinde and Dauch Paper Company, Sandusky, Ohio; Morris Paper Mills, Chicago; Container Corporation of America, Chicago; The Eddy Paper Corporation, Chicago; Schmidt & Ault Paper Company, York, Pa.; Continental Paper Company, Ridgefield Park, N. J.; and Chesapeake Corp. of Virginia, West Point, Va.

The complaint charges that approximately ten years ago certain of the respondent members of the association organized Frederick G. Becker, Inc., and put into effect what was known as the Becker Plan, under which some of them subscribed to a fund to individually purchase or lease existing paperboard mills and machinery. Under a contract entered into with the Becker corporation, the complaint alleges, each subscribing manufacturer agreed to pay into the fund specified sums of money for each ton of paperboard manufactured. The Becker corporation administered the individual funds and negotiated the purchase of paperboard mills for the subscribers to the fund.

The respondents deny that the purpose or effect of the Becker Plan was to eliminate competition in production and price. They aver that the plan was developed by the Becker corporation for the purpose of deriving a legitimate profit from promoting and acting as intermediary in the sale of paperboard mills. They contend that such sales enabled owners of money-losing mills to sell for a fair and substantial profit and that such sales also were of advantage to the consuming public as they tended to bring about full-time operation of efficient mills producing paperboard at low cost.

Although some mills were purchased by those who deposited in the fund, the answer denies that any of the respondent manufacturers are now subscribers to the Becker Plan and avers that the mill-purchasing activities have been discontinued for many years and that the Becker Plan was formally terminated as of December 30, 1944.

The respondents also deny that they have ever agreed upon or promulgated a quota system whereby production of paperboard was regulated, limited, and apportioned among the association members. They allege that the Association has taken great care in compiling and arranging its statistics so that they could not be used for a production quota system of any kind.

A separate answer was filed by a former association member, United Paperboard Company, Inc., New York City, which in general denies the allegations of the Commission's complaint. This corporation and International Paper Company and Mac Sim Bar Paper Company never subscribed to the Becker Plan, according to the answers.

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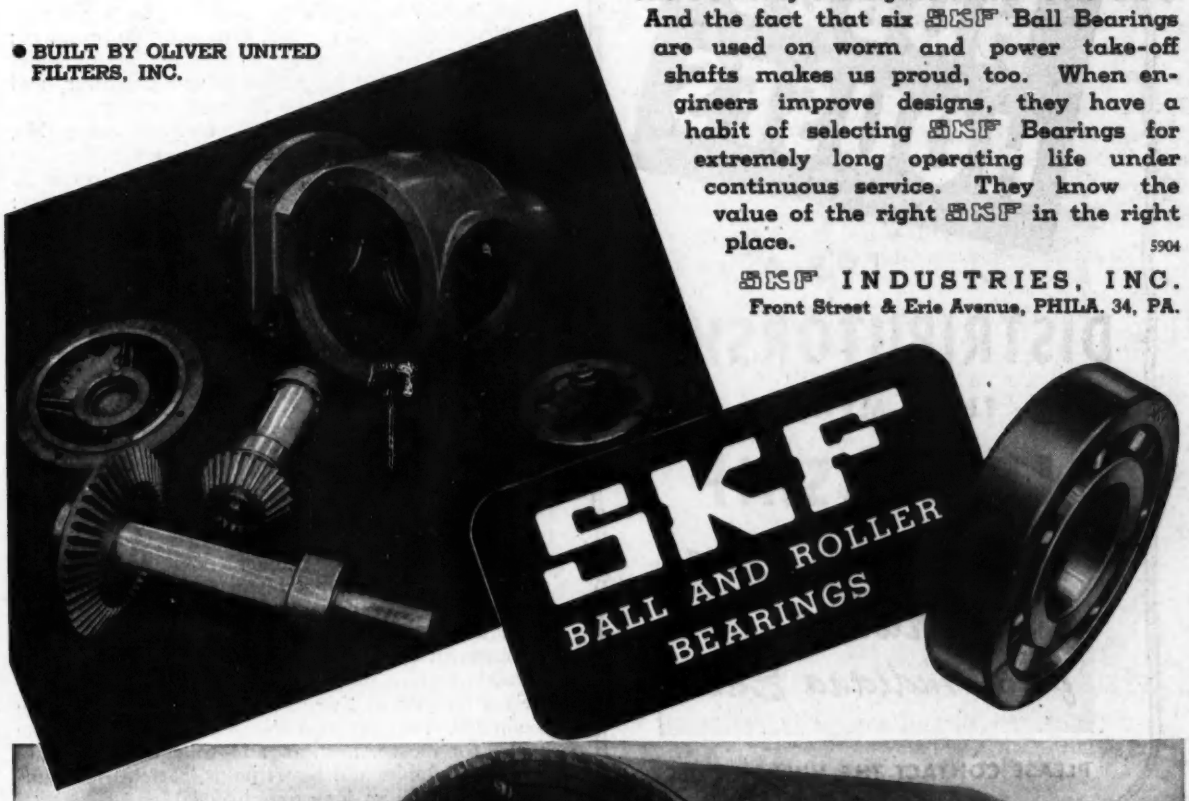

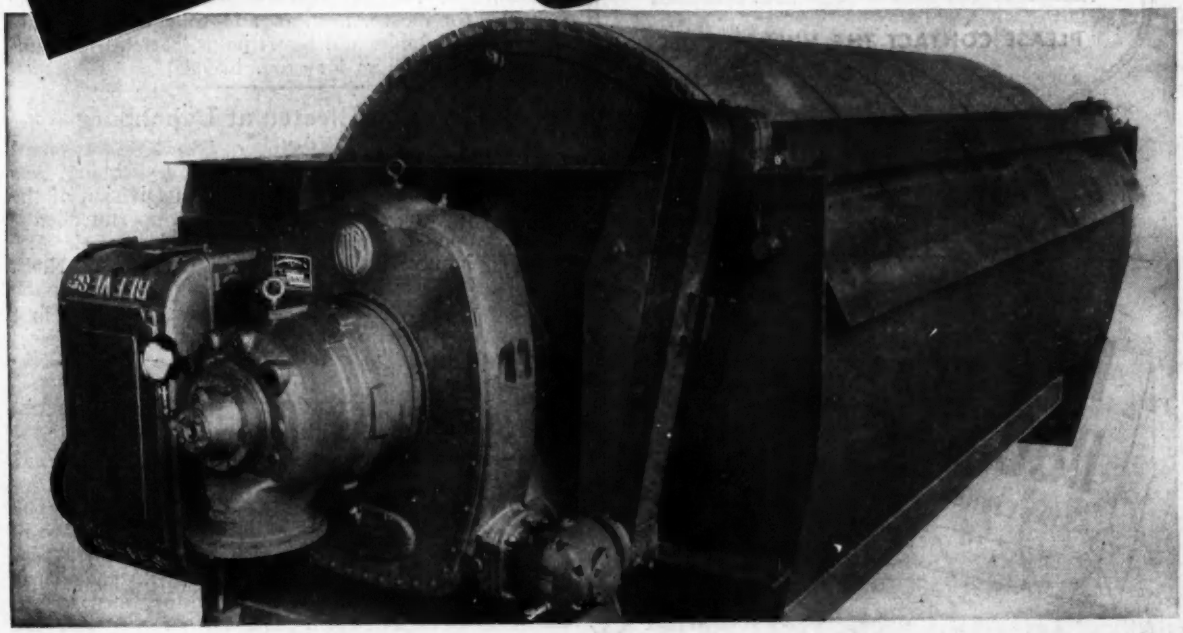

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CANADIAN VEGETABLE PARCHMENT CO., LTD.
MERRITTON, ONT.

WAREHOUSES AT ALL THE ABOVE.

Irving Osborne Joins Institute Board

APPLETON, Wis., October 29, 1945—Irving Osborne, Jr., Chicago, president of the Cornell Wood Products Company, Cornell, Wis., of Hummel and Downing Company, Milwaukee, Wis., and of the National Paperboard Association, was elected as a new member of the board of trustees of the Institute of Paper Chemistry, at its recent meeting. Mr. Osborne, a 1926 graduate of Yale University, succeeds the late Hugh Strange of Neenah, Wis. Reelected trustees for three-year terms to expire in 1948 were Ernst Mahler, Neenah; H. P. Carruth, New York, and Sydney Ferguson, New York.

Mr. Mahler was reelected president; D. C. Everest, Wausau, vice-president; Mr. Carruth, vice-president; Westbrook Steele, Appleton, executive director; John G. Strange, Appleton, secretary and treasurer, and Maxine Cahail, Appleton, assistant secretary.

Named to the executive committee were Mr, Mahler, chairman; D. K. Brown, Neenah; Mr. Carruth; David L. Luke, Jr., New York; George E. Dyke, New York. The investment committee includes: Mr. Mahler, chairman; Mr. Brown, Mr. Strange; R. J. Watts, Appleton, Wis. Academic policies committee: Nathan M. Pusey, Appleton, president of Lawrence College; Mr. Carruth; Harry F. Lewis, Appleton; Mr. Mahler; John L. Riegel, New York, and Mr. Steele and Mr. Strange.

Dauman Arrives in Sweden

Samuel Dauman, vice-president, of Gottesman & Company, woodpulp importers, New York City, arrived at Stockholm, Sweden, Saturday night, the 27th, by direct plane. This is the second flight Mr. Dauman has made to Sweden within four months. Developments subsequent to his first visit were as anticipated at that time and he has gone abroad now in the hope of expediting shipments and finding additional supplies of much needed pulp for the American consumers.

Gottesman & Company, Inc., have their own long-established office in Stockholm and represent exclusively a number of Swedish producers of high grade woodpulps. They are also sole selling agents of some of the foremost American and Canadian manufacturers of Sulphite and Kraft pulps, bleached and unbleached as well as for groundwood.

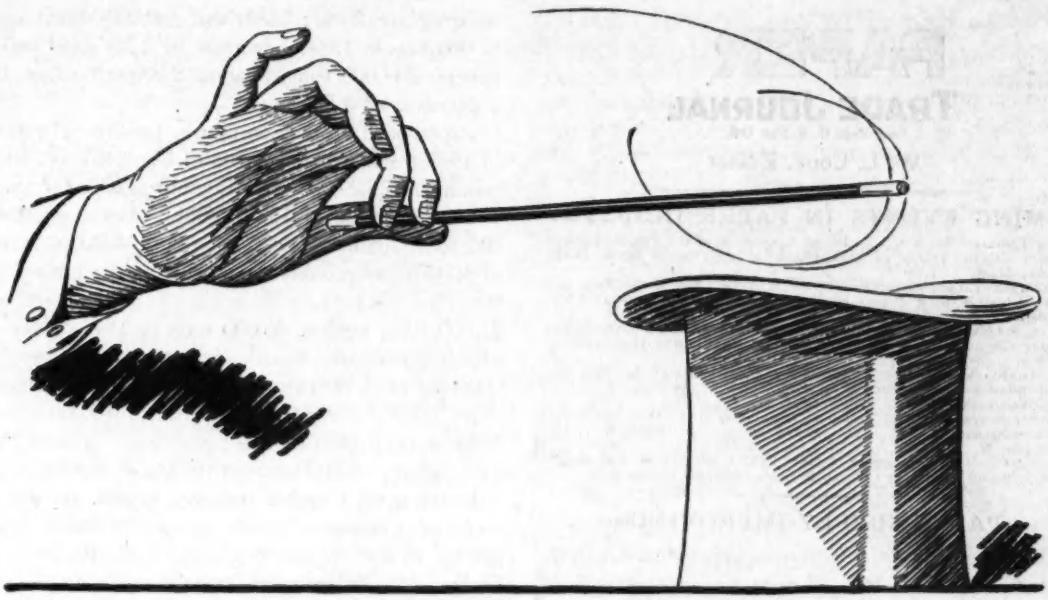
Growdon Elected at Lynchburg

LYNCHBURG, Va., October 28, 1945—Leonard Growdon, of the Mead Corporation, Lynchburg, was elected chairman of the Southeastern Division of the American Pulp and Paper Mills Superintendents' Association at a meeting held here last week. Mr. Growdon succeeds James E. Hall, of Camden, N. C.

Other officers named at the opening session of the two-day session were: A. N. Schultz, Franklin, first vice-chairman; Harry Kruse, Richmond, second vice-chairman, and Carl T. Welte, Canton, N. C., secretary-treasurer.

Hanney Will Talk to Superintendents

KALAMAZOO, Mich., October 31, 1945—The next meeting of the Michigan Division of the American Pulp and Paper Mill Superintendents Assn. will be held on Thursday, November 15, at the Park American Hotel. Dinner will be served at 6:30 P.M. John V. Hanney of the Benge Associates Hu-Management Engineers, Chicago, will talk on fitting men to the jobs in the paper industry and a self-rating scale for leadership qualifications.



No magic wand is responsible for RAYCO LINTER COTTON

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Wholehearted collaboration between Railway Supply technicians and individual paper mills' own technical staffs solved the production problems involved in making high-quality paper with RAYCO Linter Cotton.

You can depend upon the uniformly high-quality of each shipment of RAYCO Linter Cotton. RAYCO is clean, carefully graded and inspected, first-cut linter cotton—ready for the cooker. You save the time and cost of rag room operations. There are no synthetics, dyes, knots or weaving to eliminate. Result—faster production, savings in costs.

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RAYCO LINTER COTTON

PAPER
TRADE JOURNAL
Title Reg. U. S. Pat. Off.
W. L. Cook, Editor

COMING EVENTS IN PAPER INDUSTRY

New England Section. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

Delaware Valley Section. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

Lake States Section. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

Kalamazoo Valley Section. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

Empire State Section. Technical Association of the Pulp and Paper Industry—Second Thursday of each month at the Woodruff Hotel, Watertown, N. Y.

Chicago Professional Paper Group. Third Monday of each month except July and August at Chicago Bar Association, Chicago, Ill.

PAPER SUPPLY IMPROVING

The paper supply situation is improving. Current production is over 96%. Inventories are very low, however, and demand for all paper products is expected to be above supply for many months. In the paper industry the short supply of labor in the mills is an unfavorable factor in production. A larger working force is also required in the production of pulpwood. Another current difficulty is the declining collections of waste paper, which, if not improved, will necessitate the use of more wood pulp than earlier estimates had included.

Total domestic production of all types of paper and paperboard for August, was preliminarily estimated at 1,456,000 tons, compared with 1,351,000 tons in July and with 1,519,000 tons in August, 1944. Output for the first eight months of 1945 totaled 11,519,000 tons, compared with 11,466,000 tons in the like period in 1944, an increase of 0.5%. The production of paper for the first eight months of 1945, reported by the Department of Commerce, totaled 5,515,000 tons, compared with 5,469,000 tons in the like period in 1944, an increase of 0.8%. Production of paperboard for the eight month period was 6,004,000 tons, compared with 5,997,000 tons in 1944, an increase of 0.1%.

Production figures for the eight months of 1945, as computed by the Department, for the various types of paper are as follows: newsprint, 482,000 tons, against 474,000 tons in 1944, an increase of 1.7%; groundwood, 413,000 tons, against 392,000 tons in 1944, an increase of 5.3%; book, 950,000 tons, against 961,000 tons in 1944, a decrease of 1.1%; fine, 652,000 tons, against 639,000 tons in 1944, an increase of 2.0%; coarse wrapping, bag and converting, 1,299,000 tons, against 1,282,000 tons in 1944, an increase of 1.3%; shipping sack, 273,000 tons, against 260,000 tons in 1944, an increase of 5.0%; special industrial, 160,000 tons, against 163,000 tons in 1944, a decrease of 1.9%; sanitary, 540,000 tons, against 538,000 tons in 1944, an increase of 0.5%; tissue, 101,000 tons, against 106,000 tons in 1944, a decrease of 5.1%; absorbent, 60,000 tons, against 61,000 tons in 1944, a decrease of 2.2%; and building papers, 584,000 tons, against 593,000 tons in 1944, a decrease of 1.5%.

Paperboard production figures for the eight months of 1945 for the various types of board are as follows: container, 2,799,000 tons, against 2,837,000 tons in 1944, a decrease of 1.3%; folding boxboard, 1,471,000 tons, against 1,394,000 tons in 1944, an increase of 5.5%; set-up boxboard, 475,000 tons, against 504,000 tons in 1944, a decrease of 5.7%; cardboard, 45,000 tons, against 46,000 tons in 1944, a decrease of 1.9%; building board, 756,000 tons, against 731,000 tons in 1944, an increase of 3.2%; miscellaneous other board, 459,000 tons, against 483,000 tons in 1944, a decrease of 5.0%; and tube stock, 299,000 tons, against 312,000 tons in 1944, a decrease of 4.4%.

In its latest October industry report, the Department of Commerce states that the demand for all grades of paper and paperboard continues strong. Orders for civilian uses, largely replacing the wartime requirements, are in excess of the available production capacity of the moment. Production of paper and paperboard continued steady through September at the relatively high levels which have prevailed in recent months. It is clearly evident that the supply-demand situation will continue out of balance for some time to come. Mill labor is not returning as quickly as anticipated, since it appears that tired-out war plant workers and discharged veterans are not anxious to return promptly to their former work.

In reference to pulpwood, the report states that pulpwood procurement still remains tight. The solution of the pulpwood problem is now, as it has been since 1940, dependent upon the recruitment of enough new workers to meet the greater needs. The South faces the prospect of losing all prisoners of war labor.

Waste paper supply as an essential raw material now appears less well assured. The Department states that problems are beginning to arise with respect to paper stock. With the ending of the major salvage campaigns and the aftermath of VJ-Day, waste paper receipts fell below the level prevailing earlier in the year. The War Production Board is now less active in aiding the industry in raw material procurement. It is, however, encouraging to note the cooperative industry efforts, through association and industry committees, to stimulate recruitment of woods' workers and the salvage of waste paper. To measure accurately the basic trends affecting the industry in the transition and post-war periods, the monthly statistical reports on pulpwood, wood pulp, waste paper, and paper and paperboard, which will be essential to the WPB and other war agencies, as well as to private industry, will be continued by the Bureau of the Census in an abbreviated form. This will make it possible for the war and reconversion agencies, industry executives, trade associations or committees to appraise the current situation and better anticipate conditions ahead.

Hoosier Volume Up With Better Supply

INDIANAPOLIS, Ind., Oct. 22, 1945—More volume was apparent in the paper market here during the last week. Demand continued about as usual, but supplies seemed to be more plentiful and the trade believes that at last there is some hope for the future.

Among the factories the situation shows some improvement in all but employment. In spite of the fact that soldiers are being discharged in the state at the rate of 1,500 a day, paper and box manufacturers still seem short of help. It was thought that by this time help would be more plentiful and there has been some improvement, but a lot of additional persons could be put to work in various plants.

Increasing civilian demand has begun taking up the slack caused by the abrupt cessation of hostilities. This section was highly devoted to defense work and the change was particularly acute for a time. However, demand for cartons and boxes is increasing from other sources and the executives are well pleased that there has been no drastic curtailment in demand.

Demand for newsprint continued heavy last week and advertising lineage is increasing slightly. Fine paper also showed well with prices firm.

Cellophane and waxed paper demand continued good as did that for tissues of all kinds. The shortage in tissues appeared to be somewhat eased during the last week.

Pressure continued on the part of the waste paper men to secure more waste paper. Collections are reported about the same as the month before and mill demand was strong. Mill demand is expected to continue strong until the first of the year at least. Rag demand also was active with those grades used in roofing and similar papers desirable. All prices were at ceiling levels and likely will remain there.

Gill Division on 24-Hour Schedule

HOLYOKE, Mass., October 26, 1945—The Gill division of the American Writing Paper corporation is now running on a 24-hour schedule for the first time since the early days of the war. Shortage of help kept this big mill down to a 16-hour day operation for the past three years.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1945		Corresponding Weeks—1944	
Sept. 15	94.0	Sept. 16	92.8
Sept. 22	94.3	Sept. 23	91.9
Sept. 29	98.1	Sept. 30	93.5
Oct. 6	94.1	Oct. 7	93.4
Oct. 13	96.2	Oct. 14	92.9
Oct. 20	*96.5*	Oct. 21	90.7

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1944	88.7	88.5	88.1	87.6	88.7	89.8	80.3	90.6	88.2	92.5	90.6	92.4	88.1
1945	86.7	89.4	90.2	88.1	89.8	91.2	80.8	88.6	*90.2*				

COMPARATIVE YEARLY SUMMARIES

	1938	1939	1940	1941	1942	1943	1944	1945
Year to date	70.4	80.9	86.1	95.9	92.0	88.3	88.2	*88.8*
Year Average	71.5	83.4	85.6	97.4	90.4	87.8	88.1	

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS†

Current Weeks—1945		Corresponding Weeks—1944	
Sept. 15	96	Sept. 16	97
Sept. 22	93	Sept. 23	96
Sept. 29	96	Sept. 30	95
Oct. 6	95	Oct. 7	96
Oct. 13	97	Oct. 14	96
Oct. 20	*96*	Oct. 21	94

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1944	90	96	95	96	96	96	85	96	92	95	95	85	93
1945	91	95	97	97	96	96	86	90	*91*				

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.

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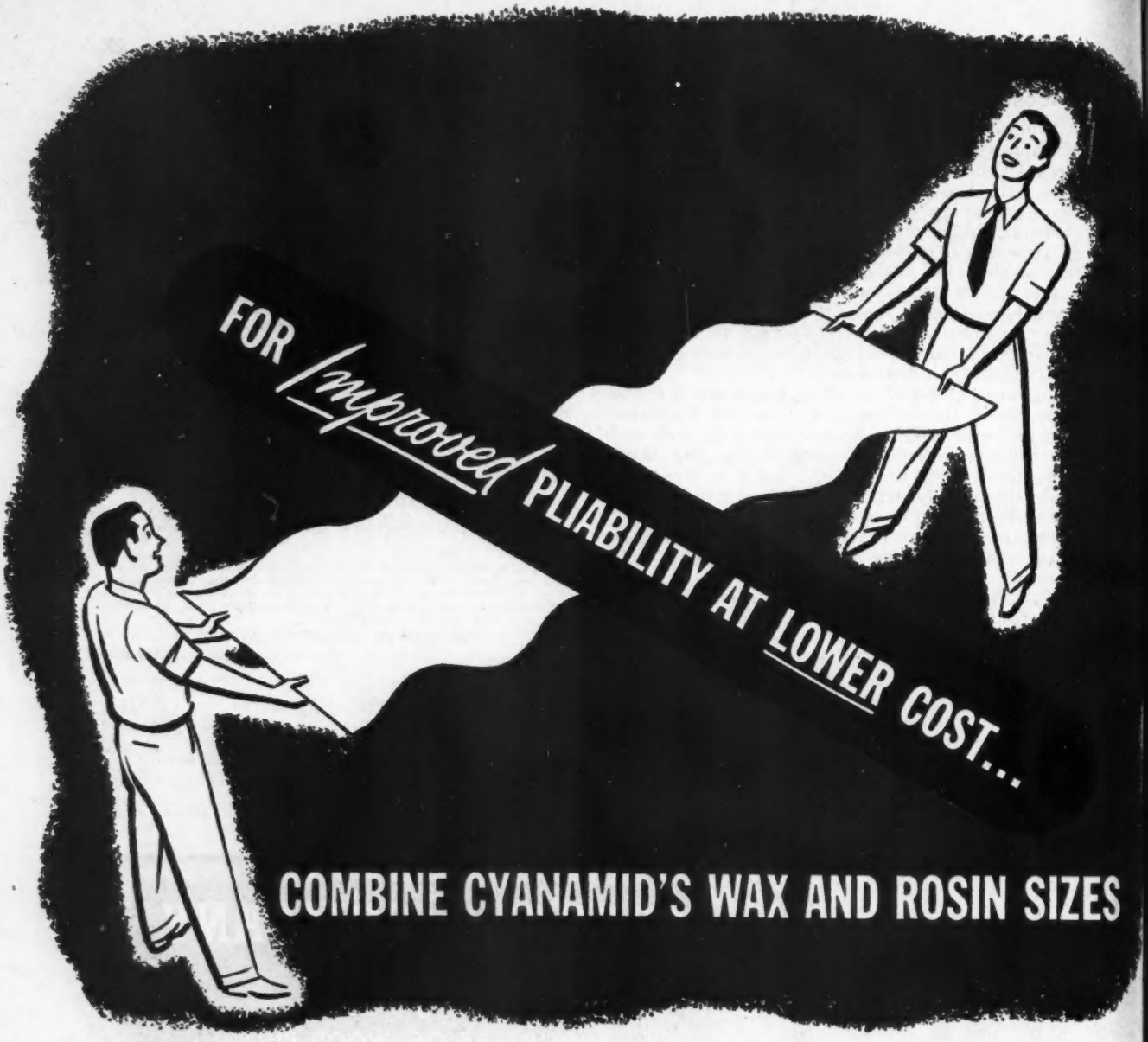

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Section of the
TECHNICAL ASSOCIATION
OF THE PULP & PAPER INDUSTRY
122 E. 42nd St., New York 17, N. Y.
Edited by R. G. Macdonald, Secretary

Projected Formulation of Stream Pollution Problems

By H. W. Gehm[1]

Abstract

By modern methods of analysis it is possible to determine the relative degree of responsibility of municipalities and industries for stream pollution and to calculate the degree of abatement necessary on the part of all concerned to maintain the water in suitable condition for the purpose to which it is to be put. Such analyses are of value in projecting suitable waste treatment facilities and assisting research organizations in evaluating developments. An outline of the procedure employed is presented.

Many of the streams in this country and, particularly, those in the most highly populated and industrialized areas have been the subject of considerable survey activity for many years. Masses of data have been collected by regulatory and conservation agencies and in a number of cases by industries themselves. Some of this data has proven useful for the purpose for which it was intended as it served to determine water quality and the degree of pollution. However, much of this work was carried only to this point for one reason or another. It is possible to extend the usefulness of such data, if properly collected, to determine a number of additional factors which are of paramount importance to industry and others concerned with the use of surface waters for supply and waste disposal. By techniques developed by stream experts of the U. S. Public Health Service Experiment Station, the Institute of Public Health at Columbia University, Manhattan College, and Columbia University, it is possible to derive the following information for a watershed with reasonable accuracy:

1. The degree of responsibility of municipalities and individual industries for pollultion.
2. The degree of abatement necessary to restore the water to satisfactory condition for the uses to which it is to be put.
3. The degree to which the stream may be safely utilized to purify wastes.
4. The effect of water diversion and impounding upon the water quality.

Such information is vital to all water users to protect their equity in a stream and assure its utilization to capacity. Future industrial expansion will be guided to an important degree by this factor. The end of the period in this country is approaching where water resources are available in such quantity as to allow indiscriminate use. However, in the establishment of water use there are conflicting interests. These are important to the national economy in varying degrees under different geographical and other conditions. It is no more practical to expect streams, studded with heavy industry, to be retained in pristine purity than it is to allow all potable and recreational waters to be contaminated. Neither should as valuable an asset, as a river, become the source of public nuisance. True conservation means the intelligent use of a resource to the maximum capacity of all its assets. As large water users, industry must protect its equity and can best do this by taking the leadership in setting its own house in order regarding water use.

Formation of Stream Improvement Council

The pulp, paper, and paperboard industries, being large consumers of water and beset by serious waste disposal problems have advanced further than other industries in consciousness regarding this resource. The efforts of the past have indicated a need for a combined operation on the part of this industry as it was found to embody a multiplicity of intricate problems differing from place to place and process to process. This realization culminated in the founding of the National Council for Stream Improvement, whose task it is to solve surface water problems by means of research and development work in the field of pollution control. Legislation and regulation have proven their inability to protect streams as this is not a problem which policing or political activity can handle. More judicial use of streams will come only through consciousness of necessity and provision of means whereby control of pollution can, practically and economically, be carried out. It is an undertaking of great magnitude and must be handled as such from an offensive, rather than a defensive, position.

In undertaking the broad program of the Council, it was felt that one of the most important jobs consisted of evaluating existing pollution problems in the best possible manner. Manhattan College was selected for the work, because personnel, recognized as authorities in this field, were available there, the necessary library facilities were at hand, and its proximity to the offices of the Council allows close cooperation. At present a staff of three people are engaged under the direction of Professor Velz. Employing existing stream survey records, Manhattan College is proceeding with an evaluation of the problems of the pulp, paper, and paperboard industries on all the watersheds, or sections thereof, where the industry is concerned to an important degree. Public agencies have

[1] Member TAPPI; Tech. Adviser, Nat'l Council for Stream Improvement, New York, N. Y.

expressed their willingness to cooperate in this job by directing additional survey efforts toward filling in gaps in the existing data.

Evaluation Procedure

A brief account of the procedure involved in making these evaluations may be of interest to this group. The first task of the project will be one of obtaining and assembling proper detailed maps of the watersheds. These must be in large scale to allow locating the details of pulp, and paper mill locations and municipal and industrial water intakes and sewers.

Collection of area maps alone is quite an undertaking, as uniform maps showing sufficient detail are not in the possession of any one agency and, in some cases, sectional maps of uniform scale are not available at all. In such cases, existing maps must be redrawn to corresponding scale. Upon these maps the location of municipal and industrial water intakes and sewers must be spotted and identified, and all stream appurtenances shown. The physical character and profile of the stream must also be indicated for certain sections. To date, this work is proceeding at a rapid rate, and on completion a full set of detailed watershed maps will be available for use in the analysis procedure and for reference purposes.

Secondly, the monthly records of volume and temperature runoff of water diversions, water supplies, and waste discharges must be obtained in as complete detail as possible. Accompanying these data must be notations regarding periods and methods of measuring and any existant limitations to indicate reliability. Chemical and sanitary analyses of the streams throughout areas where the industry is involved must be obtained for each season of the year together with representative analyses of sewer effluents.

Thirdly, notation must be made for zones of the watersheds regarding the uses to which the water is put. Potable and industrial supply, cultivation of marketable fish and shellfish, recreation and bathing, navigation and other uses must be considered in this regard. The existence of nuisances resulting from pollution will also be recorded.

Additional information, of value in assembling a comprehensive picture, consists of existing and tentative regulations and standards regarding water quality and effluent discharge. Reference as to control of water flows to adjust seasonal variation will be recorded as, in some instances, this procedure is practical where considerable volumes are impounded. Facts will be obtained concerning degree and efficiency of waste treatment and prevention will also be of value as analysis of the various conditions will indicate what procedures must be followed in this regard and what the needs of the industry are in respect to effluent treatment, e.g., results may show that in a number of instances more careful control in the manufacturing process may suffice. In others it will point out the requirement for a treatment process which would apply. This information will be of inestimable value to research groups working on treatment processes, as it will give them a yardstick for measuring the applicability of their developments and projected ideas.

On completion of the mapping, collection, and assembly project outlined above, reports will be prepared to accompany each map setting forth in abstract all the pertinent facts concerning each stream, and including the results of computations made with these data which will provide answers to the many questions involved in stream improvement. Hence an abstract and fairly complete guide for attacking the problems at hand will be obtained.

TAPPI Notes

Dean W. Newell, formerly of the U. S. Gypsum Company, is now manager of the paper mill, Philip Carey Manufacturing Co., Lockland, Ohio.

Robert E. March, formerly of the Gaylord Container Corp. has returned as a student to the Institute of Paper Chemistry, Appleton, Wis.

Boonyium Meesook is now engineer for the Sandy Hill Iron & Brass Works, Hudson Falls, N. Y.

Marion F. Smith, formerly of the Philip Carey Manufacturing Co. is now technical director for the Simpson Logging Co., Shelton, Wash.

Erik Solitander, formerly of Jay Madden, Inc., is now with the Finnish Board Mills Association, Helsingfors, Finland.

Max R. Oberdorfer has returned from the Army to the St. Helens Pulp and Paper Co., St. Helens, Ore.

Ralph T. Nabbaro, formerly of the Mellon Institute, is now vice president of Agawam Chemicals, Inc., West Springfield, Mass.

Almeron W. Wickham, formerly superintendent of MacAndrews & Forbes Co., is now located at 919 Gaunt St., Gloucester City, N, J.

Peter J. Abel, formerly of the War Production Board has returned to the Stickles Steam Specialty Co., and is located at 35 Lincoln St., Hudson Falls, N. Y.

Roy P. Whitney formerly of the staff of the Massachusetts Institute of Technology is now coordinator of industrial research at the University of Maine, Orono, Me.

Marcus Rosendahl, managing director for Billingsfors Langed and Gustafsfors Fabrikers A. B., Billingsfoors, Sweden, is now visiting in the United States.

E. C. Reid, vice president, American Writing Paper Company has succeeded L. M. Yoerg (retired) as official representative of the company in the Technical Association.

The TAPPI Delaware Valley Section will meet at the Engineers Club, Philadelphia, Pa., on Friday, November 2nd at 6:30 p. m. Walter G. Hendrich of the Hammermill Paper Company will talk on the subject: "How Can the Paper Technologist Further Progress in the Industry?"

The TAPPI Ohio Section will meet at the Manchester Hotel, Middletown, Ohio on Thursday, November 8th at 6:30 p.m. There will be a forum discussion of Tub Sizing Studies led by S. R. Olsen, Champion Paper & Fibre Co., Phil Cade, Harding Jones Paper Co., E. C. Hendrickson, The Mead Corp., and C. E. Brandon, The Aetna Paper Co.

The Niagara Group of the TAPPI Empire State Section will meet at the Prospect House, Niagara Falls, N. Y., on November 14th at 6:30 p. m. Norman Weil of the W. S. Tyler Company will discuss Fourdrinier Wire Problems.

The Hudson River Group of the TAPPI Empire State Section will meet at the Queensbury Hotel, Glens Falls, N. Y., on Friday, November 16th at 6:30 p. m. R. Tutt of the Peter Cooper Corp. will discuss The Use of Glue in the Sveen Process.

The TAPPI New England Section will meet at the Roger Smith Hotel, Holyoke, Mass. on Friday, November 16th.

The Modern Artificial Pulpstone

By J. H. Perry[1]

Abstract

The materials used and the process of manufacturing artificial pulpstones are described. Advice is given on mounting and operating procedure. It is important to the life of the stone that the temperature be increased gradually up to the operating temperature and that the stone is not subjected to thermal shocks.

To present a picture of the modern artificial pulpstone, it is necessary to go back a little to its inception.

Until 1920 all mechanical pulp was produced on natural stones. At that time the Norton Company decided to investigate the possibilities of producing pulp with artificial abrasives and many sand stones were analyzed to arrive at the proper grain size, grain distribution, and hardness.

By 1926 a pulpstone had been developed to meet all the mechanical strains encountered in the pulp mill at that time and which would produce a good quality pulp. Since then great strides have been made in mechanical pulp production; new grinders have been designed utilizing power inputs as high as 2800 hp. per stone simply because it was possible to build a stone strong enough to absorb the high power and high surface speed.

Within the next few years there may be grinders operating with 3000 hp. per stone at speeds up to 5000 s.f.p.m. Each step in the progress of pulp mills has been met and often anticipated by the artificial pulpstone manufacturer.

[1] Pulpstone Technical Advisor, Norton Company, Worcester, Mass.

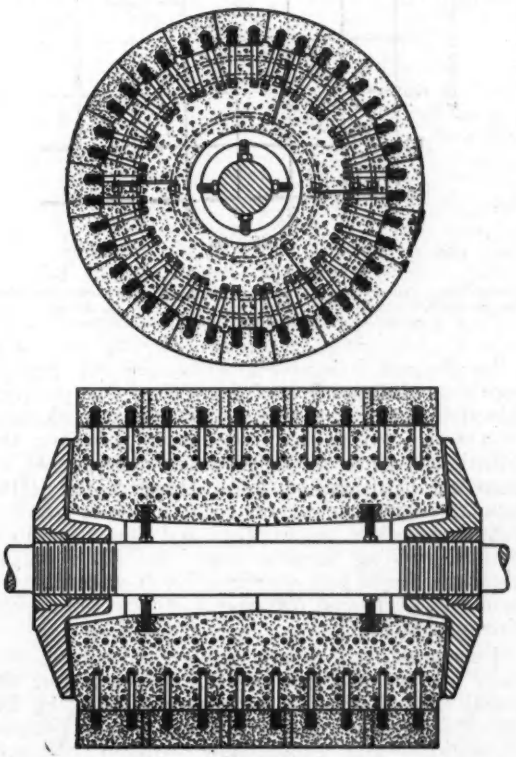

FIG. 1

Cross-Section of Stone Showing Construction and Method of Mounting with Standard Shaft and Flanges. Note Bore in Stone Is Oversize for the Shaft Which Is Accurately Centered by Means of Set Screws.

Stone Construction

There are three types of abrasive used in the pulpstones, trade-marked Crystolon, Alundum, and 38 Alundum.

Crystolon abrasive, (silicon carbide), is made by charging a resistant type of electric furnace with pure glass sand, finely ground petroleum coke, sawdust, and common salt. The silica or sand combines with the carbon of the coke forming the product commonly known as silicon carbide. The sawdust serves to make the mass porous in the furnace and the salt combines with the impurities forming compounds that can be readily removed.

Silicon carbide is the most widely used abrasive in the paper industry; however, the type of pulp desired and existing grinding conditions may indicate the use of any one of the three types mentioned.

Alundum abrasive is made by fusing the claylike mineral bauxite in an arc type electric furnace. The bauxite, aluminum hydroxide, is first heated to drive off the moisture and then mixed in the furnace with iron borax and ground coke. The mixture is further heated until the substance containing 95% aluminum oxide is evolved. Then the resultant product is refined to become practically pure aluminum oxide.

No. 38 Alundum abrasive is obtained by modifying the manufacturing process which imparts special characteristics to the abrasive. This abrasive has been proved the most successful in the manufacture of board or high freeness pulp. It produces a long fiber with higher strength to freeness ratio than does any other type of abrasive. Thus, power consumption has been reduced as much as 15% on board pulp.

The crystals of the various types of abrasive, after they are removed from the furnace, are crushed and accurately sized through screens.

In the finished pulpstone the grains of abrasive are held together and spaced with a vitrified bond. The bond is made by melting clay, feldspar, and other material into a porcelain or glasslike substance.

The material making up pulpstone segments, that is, the abrasive grain and bond, are accurately weighed, mechanically mixed, and placed in a mold. The mold is then placed in a hydraulic press and subjected to an exact, predetermined pressure. The segments in the "green" state, are drilled and threaded to accommodate the four stud bolts and then placed in an oven of controlled temperature and thoroughly dried. From this oven it is placed in a kiln where it is vitrified at temperatures exceeding 2000°F. for several days and then gradually cooled to room temperature. The temperatures in the kiln are held to extremely close limits by means of electrothermocouples and frequent checks with pyrometric cones. Kiln temperature is recorded throughout the cycle so that the segments can be exactly duplicated at any time in the future.

Among the terms used in pulpstone specifications are: grain, grade, and structure. By grain is meant the type of abrasive and the size or sizes to be

employed. By grade is meant the hardness or tenacity by which the abrasive grains are held together. Structure means the relative grain spacing. The grain sizes employed in pulpstones range from a coarse No. 16 grit to 100 grit size and many combinations of the different sizes. The grade at the present time ranges from "J" soft to "S" hard. The structure range in pulpstones is from No. 5 structure which is dense to No. 12 structure which is very open.

There is yet another feature, designated as "controlled structure," by which the grains of abrasive are definitely spaced in the segment structure so that the same uniform grinding face is presented from the first day the stone is used until it is worn out and discarded.

Each segment is tested for grade and carefully examined for imperfections. Any segment showing the slightest imperfection is discarded.

The segments are assembled with a jointing material placed between them to permit free expansion and contraction with changes in temperature.

Mounting

The operation of artificial pulpstones is most important, and it is well to bear in mind certain fundamentals that will enable an operator to fully utilize the advantages built into the stone.

When a pulpstone reaches the mill, it is good practice to leave it on its skids until the time comes to hang it. This helps to protect the stone from damage while on the grinder room or stores department floor. It is essential that the shaft and flanges are in good shape and strong enough to stand the load used on the grinder. Insulating board, made of groundwood, about ⅜ inch thick is the most popular flange gasket material used today, but some mills use drier felt, wood, or cement grout. The use of bronze sleeves to protect the threads on the shaft and flanges is widespread and is recommended.

Because of centering screws in the bore it is possible to hang the stone to almost perfect concentricity. It is, therefore, not necessary to true it before installing in the grinder. After installation it should be dressed by opening up the surface with a relatively fine diamond burr before the pulpmaking burr is applied.

Start-up temperature on a newly installed stone is most important. This is especialy true in the winter time should the stone be very cold. Normally the stone is about the same temperature as the grinder room when started, about 70°F. and should not be increased more than 10° per hour until the stone is up to normal operating temperatures. Operating temperatures vary widely depending on mill preference together with the temperature of white water system.

Operation

Normal operating temperatures today range from 140 to over 180°F., but in some mills where fresh water showers are used the temperature during the winter may be as low as 110°F. Other things being equal better pulp is made at higher temperatures, and there is no danger to the stone at these temperatures if the variations are held to fairly close limits. Low consistency grinding has greatly increased the accuracy of temperature control and has made the temperature regulators, when properly installed, an efficient control instrument.

During shutdowns, it is preferable that the stone cool off as little as possible. Some mills accomplish this by raising the dams and leaving the stock in the pit. Others have the front of the grinders covered up so that cold drafts cannot strike the stone, whereas others during a shutdown keep the temperature of the grinder room around 80°F. so that the stone does not have a chance to become chilled.

Unfortunately, the majority of mills have to use unheated fresh water on start-ups and during the winter months this is often only a few degrees above the freezing point.

FIG. 2
Inspecting a Pulpstone

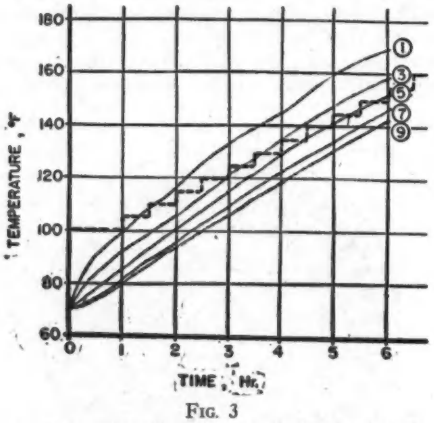

FIG. 3
Temperature Penetration When Pulpstone Is Heated Gradually. Numbers in Circles Represent Distance from Stone Face in Inches. Dotted Line Shows Recommended Temperature Increase.

In all cases, it is preferable to raise the temperature about 10° per hour from whatever temperature the stone is at before start-up. (Fig. 3) Since there is a wide difference of conditions governing this situation in different mills, it is impossible to lay down any hard and fast rules. However, the perfect setup would be to maintain the stone at grinding temperature over the weekend and then start up at normal grinding temperatures. As this is almost impossible, each mill should strive to approach this point of perfection as closely as equipment and circumstances allow.

During the past decade, great strides have been made in mechanical pulp control and an almost universal acceptance of low consistency grinding has greatly increased efficiency, minimized temperature fluctuations, and substantially reduced pulpstone breakage. However, inasmuch as foreign material still gets into the wood supply and as long as the

science of pulp grinding remains as it is, other definite hazards still exist which can cause either general or localized heat shocks.

In the event of damage to a pulpstone by overheating or some other external means, the pulpstone is so designed that a new segment can be installed in the grinder, eliminating the necessity of dismantling and losing many hours of valuable operating time.

A pulpstone over half worn out can be repaired with a patch of special pulpstone cement; some mills insert pieces of a broken up segment in the patch giving it an abrasive content which will take a burr impression. A patch applied in this manner will last the remaining life of the stone.

There is no set formula used in selecting specifications for a pulpstone. However, the following factors have to be considered: 1. wood to be ground, 2. type of pulp required, 3. type of grinder, 4. power input, 5. area of contact, 6. peripheral speed, 7. cylinder pressure (unit pressure), 8. condition of grinder, 9. condition of lathe, 10. sharpening technique, and 11. general operating and control practices.

It can readily be seen from the factors mentioned why a wide variety of grain combinations, degrees of hardness (grades), and structure is necessary.

The success of the artificial pulpstone is largely due to progressive operators who are always striving for better pulp, better methods of operation, and lower operating costs.

Lake States TAPPI Discusses Sizing

The Lake States Section of the Technical Association of the Pulp and Paper Industry had its first meeting of the season on October 9th at the American Legion Club House in Appleton, Wis. A panel discussion was held on sizing, particularly with reference to extenders and additives. Chairman H. P. Dixson president at the meeting, at which 109 were present. B. W. Rowland, of the Institute of Paper Chemistry, acted as discussion leader. Before the discussion, short talks were given by the panel members. W. M. Bain of the Glidden Co. discussed Prosize, John P. Bainbridge Jr., of Monsanto Chemical Company described Mersize and the use of sodium aluminate, and Paul Easton of the Hercules Powder Company touched on the rosin supply situation, general methods of size conservation, and size testing. Subsequent discussion centered on such questions as the difference in behavior of sized papers toward water and collodial solutions, advantages of continuous addition of size and alum, effect of water hardness, reasons for seasonal fluctuations in sizing, size testing, and effect of paper machine variables from the inlet to the reel.

Those who attended were: Alan P. Adrian, Francis J. Allard, Henry Allison Jr., Robert P. Anderson, J. W. Appling, L. R. Ayers, W. M. Bain, John P. Bainbridge, John W. Bard, Arnold G. Beaman, Geoffrey Beall, W. W. Benton, Peter B. Borlew, G. J. Bowden, Maurice C. Boyer, Loyd J. Broehm, Glenn Carroll, T. C. Catlin, Cheng, Ke-Jen, Walter C. Christensen, T. T. Collins, R. T. Cowing, J. C. de la Macorra, H. P. Dixson, Paul Easton, G. F. Enderlein, Joe Fike, L. E. Fitzgerald, George W. Forcey, L. V. Forman, Frank D. Frampton, Herbert F. Gardner, Winfred B. Giese, J. Graff, John W. Grimes, Harry H. Haldeman, Captain F. W. Hall, John A. Hanson, Paul B. Hanson, Alfred M. Heald, Raymond W. Henschel, H. W. Hillier, Ray N. Hollands, T. A. Howell, C. R. Humphries, Axel Hyttinen, Irv. Isenberg, E. C. Jacobi, A. F. Jankowski, H. S. Johnston, Peter E. Jones, Wm. S. Kennedy, M. J. Kershasky, R. M. Kingsbury, A. R. Kjellgren, Lloyd L. Klinger, Otto Kress, J. J. Kryszak, Otto Kuemmerling, Stephen Kukolich, Warren S. Kumblad, Alex Laux, Arno J. Luth, George S. Mackin, A. E. May, R. C. McKee, Wm. H. Monsson, James J. Nick, T. A. Pascoe, Gilbert Paulson, F. G. Pavlick, Alfred Phillips, Kenneth E. Pinkerton, T. R. Probst, W. B. Pusey, R. M. Radsch, E. W. Rasmussen, B. W. Rowland, Milton G. Schmitt, E. C. Schuler, James E. Seymour, Howard K. Sheldon, John S. Shourt, F. A. Simmonds, Joe Smart, L. E. Smith, I. J. Stafford, R. A. Stillings, Jerry P. Strasser, W. H. Swanson, Frank Swedish, Vernon H. Turesdale, Walter C. Utschig, J. A. Van den Akker, Cornelius Van den Boom, E. H. Voigtman, J. D. Wells, S. D. Wells, John G. West, Albert Wilson, Willmer Wink, C. Merrill Winne, R. M. Winrich.

Glens Falls TAPPI Discusses Sizing

The Hudson River Group of the Empire State Section of the Technical Association of the Pulp and Paper Industry met at the Queensbury Hotel, Glens Falls, N. Y., on Friday, October 19th. Robert Wynne-Roberts of the Finch, Pruyn Company presided as chairman.

Henry Mellen of the Hercules Powder Company, Holyoke, Mass., gave an informal talk on "Some Thoughts on the Present Situation in Rosin Sizing."

Those present included: E. S. Baker, Stanley Barss, D. W. Blandy, Herbert Cohen, Allan B. Copping, F. L. Darrell, V. P. Edwardes, H. W. Fales, Frank M. Foster, Charles Gero, Chas. J. Grant, Arthur E. Gray, Michael Harrigan, Francis L. Harrington, Clayton R. Howe, Edward Hutchins, D. D. Linehan, R. G. Macdonald, F. J. McCourt, B. Meesook, H. L. Mellen, R. E. Menkey, R. I. Moran, R. D. Moynihan, Erle A. Phelps, George Pomeroy, Wm. Roberts, Francis Russell, H. A. Spencer, R. K. Staman, P. D. Switzer, K. A. Taylor, F. P. Thornton, W. Bradford West, R. H. Wiles, R. I. Wynne-Roberts, A. E. Youngchild.

Process Control

John Wiley & Sons have recently issued "Principles of Industrial Process Control" by Donald Eckman of the engineering department of the Brown Instrument Company (237 pp. 6 x 8½). The aim of the book is to make available to the engineer the underlying principles with which he must be familiar if he is to handle the mechanisms used in industrial instrumentation. It gives a comprehensive treatment of measuring characteristics of controllers, the effect of process load changes, the effect of valve characteristics, and correlated or multiple control systems. It includes a complete list of 119 references on automatic controls and a glossary of 126 terms and definitions. It may be used as a training manual in any industrial plant where control measures are in use or contemplated.

Among the subjects covered are: modes of automatic control, process characteristics, potentiometric measurements, temperature measuring elements, pressure, humidity, fluid flow, liquid level, metering, etc.

Copies may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry, 122 East 42nd Street, New York, N. Y. at $3.50 per copy.

Map Making

By Warren C. Crump[1]

Abstract

Paper mounted aluminum plates, white painted zinc plates, and four types of plastic materials are being popularly used by mapping activities in the preparation of original drawings for reproduction. Plastic materials available in size 51 by 150 inches with thickness of 0.010 inch have increased in use, but the present supply is limited.

The general trend in the manufacture of map printing papers during the present emergency has been toward a lower rag content and decreased weight and thickness. Large bulk shipments of charts and maps overseas required that the weight be reduced. Installation of air conditioning equipment in government mapping activities in the past few years has required other changes to be made in physical characteristics and chemical composition of papers.

Maps and charts have been printed on Celanese, on both sides and in colors for use on life rafts and aircraft and have a decided advantage over paper printed maps in that they are both waterproof and sunproof. They have the added advantage of being used as a head covering and protection from the sun, for use as a sail, and for signaling purposes.

Color printing of nautical and aeronautical charts for Naval use has been modified to permit them to be used under a red light. While the colors lose their identity, contrasting shades are retained.

The development of waterproofing and fireproofing materials for application to printed charts and maps has received some attention. Both lacquers and plastic materials are now available for this purpose.

Since accurate and available maps, charts, and publications are required for the successful prosecution of any war, it is natural to expect the present conflict to require the greatest number being the biggest of all wars. Not only are larger quantities of maps required but more different kinds and more specialized than before.

From the initial field survey to the final printed map, many different papers and materials will be used.

The intention of this paper is to describe, generally, some of the materials, requirements, practices, and trends in the U. S. Government mapping activities with special attention to those of the Hydrographic Office, U. S. Navy. Only those items which are believed to be of interest to persons in the paper and graphic arts industries are included.

Original Surveys

In the selection of a medium for the drawing of original survey information, the following points are of primary importance: body (thickness, grade and color), surface, erasing quality, permanency, and dimensional change.

For many years the material used for the plotting of field surveys consisted of a 100% rag stock paper, mounted on heavy, high grade muslin, stretched, and air-dried. The adhesive used for mounting these papers is specially prepared for the purpose assuring a permanent joint between paper and muslin that will not deteriorate with age.

[1] Assist. Head Eng., U. S. Hydrographic Office, Navy Dept., Washington, D. C.

More recently aluminum-mounted sheets have been adopted by some mapping agencies as the standard for all planetable work. The decision to adopt them was based upon the results of extensive tests carried on in various parts of the country and in Alaska, and under varying operating conditions. These tests brought out the following advantages: 1. no distortion, 2. not subject to wind disturbance, 3. more impervious to water, and 4. details can be inked more clearly.

In one of the tests made in Alaska, the use of the finest grade muslin mounted sheet showed a variation of from +0.30 to —0.82% over the period of use, whereas the aluminum-mounted sheet retained its original size throughout. When it is considered that sheet distortion is one of the most bothersome aspects of planetable work, this factor was sufficient to justify the change.

The adoption of aluminum-mounted topographic sheets has been followed by notable improvements in the accuracy of positions obtained and are, in general, preferable from convenience and ease of handling by the topographers.

It is believed that eventually, a suitable transparent or semitransparent plastic with a low degree of expansivity will become the standard medium for field work. Such a material will have still further advantages over the aluminum-mounted sheet, as it would be lighter in weight, easier to carry, waterproof, could be used for making contact photo prints, and could be rolled for mailing or storing in a tube.

Drawings for Reproduction

The preparation of original drawings of maps on plain or muslin mounted paper has been discontinued because of the recent development of more suitable materials.

For small maps, up to size 24 by 31 inches, aluminum-mounted sheets similar to those used for the plotting of original surveys, are the most popular.

For large maps up to size 36 by 60 inches, white painted zinc plates, or suitable plastics are employed. The zinc plate receives an undercoat and top coat of white paint, both of which are sprayed on, and permits the drawing of fine ink lines. There is no dimensional change in this original.

Four types of plastic materials have been successfully used in the preparation of large original maps. These materials are available in varying thicknesses, with the 0.010 inch gage being the most popular. Unlike the zinc plates or aluminum-mounted sheets, plastic materials are available in sizes up to 51 by 150 inches. They have the added advantages of being lighter in weight than the zinc plates, are flexible, have better erasing qualities, and can be used for making direct contact prints. Dimensional changes are usually very small, are less than those for high grade mounted papers but greater than those of a mounted aluminum plate or painted zinc plate.

Lettering, symbols, and abbreviations which appear on maps and charts were formerly printed on plain paper from type or electrotype plates and pasted to the original drawing. Imprinting upon a high quality rice paper and upon both sides of thin transparent cellophane have superseded the older methods. The rice paper impressions are applied to the original drawing with a gum arabic solution; the cellophane

impressions with a special wax coating on the under side. Both the rice paper and cellophane are easily removed from the original drawing and are thin enough to prevent any shadows in photography. Further experimental work is being conducted in this field.

It is believed that the use of plastic materials for original drawings will receive more attention in the post-war period.

Copper Plate Printing

In the various government agencies many maps and charts were originally engraved upon copper plates and glass (wet plate) negatives. Impressions from these engraved plates are excellent for reproduction but the engraving usually requires more time to complete than the present hand drawn methods in ink.

Proofs from these copper plates for inspection or revision are usually made on a high quality 96 pound, 100% rag stock containing minimum quantities of bleach, rosin size, and alum, and which must not contain any chemicals that will interfere with the permanency of color or the serviceability and durability of the paper. Impressions are made after first moistening the paper with a solution of water and glycerine. The paper stretches slightly when moistened and shrinks upon drying, resulting in an unequal reduction with and across the grain from the original copper plate dimensions.

Experiments with the standard weight of high wet strength paper developed for the Army have revealed some interesting possibilities. Proofs made on this paper were found to retain more closely the copper plate dimensions. It is, however, more difficult to handle when damp and does not dry out as smoothly as the 100% rag stock. Proofs made on this paper should be satisfactory for general examination.

The final copy for reproduction is made on a high quality coated (but unsensitized) photographic paper which is backed by a single full size piece of blotting paper. Similar to the previous methods, the surface of the paper is treated with water and glycerine. The blotter backing assists in retaining the original plate dimensions, but a slight shrinkage is usually observed.

Printing Papers

Practically all maps and charts prepared by government mapping activities are reproduced in colors by offset lithography. With such a wide variety of maps to be printed, it is natural to expect that a variety of papers would be required.

The general trend in the manufacture of map printing papers during the present emergency has been toward a lower rag content and decreased weight and thickness. Large bulk shipments of charts and maps overseas required that the weight be reduced.

Originally Army maps were printed on a fine rag paper, supposed always to be the best and most indestructible for all maps. Military forces in the South Pacific, however, had to report that the maps were bad and were rotting in 4 days. As a result Army Map Service paper experts set out to find a paper which would stand the tropics, desert, arctic, and high altitudes. In a wood-pulp paper, 80% long-fiber spruce, they found a sheet that looked promising. The results of subsequent tests on this paper (high wet strength map) were hard to believe.

The printing, and distribution of nautical charts to the Navy and Merchant Marine offers a few problems not generally encountered with Army maps, and for this reason a different type of paper is required. Nautical charts are usually printed in small quantities, about 1,500 to 5,000 copies per edition, are stocked on shelves, and are brought up-to-date for important changes and information prior to issue by making the necessary corrections by hand. This may involve the addition of new information or the deletion of obsolete information and may require the erasing of the same area several times. A chart may be used for a long period and therefore, should be both serviceable and durable. Certain harbor and coast charts which are frequently referred to, must have a high folding endurance as most charts must be folded to be stored in the limited spaces usually found in a chart room on board a ship. The surface and finish must be suitable for offset multicolor printing, the same as for Army maps.

Up until several years ago, the paper used for the printing of nautical charts consisted of 100% rag stock, with basic weight of 96 pounds, which was later reduced to 83 pounds. With improved methods of manufacture and treatment, the rag content was reduced to 50%, the difference being made up with bleached sulphite. The weight was retained at 83 pounds. After trial for some time in air conditioned plants and because of the existing emergency the weight was still further reduced to 80 pounds. Early in 1944, due to the continued difficulties in obtaining pulp and materials, the weight was still further reduced to 72 pounds, retaining however, the 50% rag content.

Naturally, some lowering of physical characteristics was expected with the lowering of weight (80 to 72) and thickness but 10% more paper was produced from the same quantity of materials and resulted in a savings of 8% to the U. S. Government.

Other papers of lighter weight with varying chemical content and physical characteristics must also be used in the printing of special charts. Some charts require that the paper be transluscent to permit the comparison of plotted information on one sheet with that on another, such as for weather information. Other maps require printing on more transparent paper to permit reproduction of the map and plotted information by direct contact printing, blueprint, Ozalid, etc.

Cloth Charts and Maps

A new "life raft chart" developed by the Hydrographic Office, and printed on Celanese fabric instead of paper, goes far toward meeting the suggestions of Capt. Eddie Rickenbacker — rescued after drifting three weeks on a rubber raft at sea. Unlike the paper chart he had which turned to illegible pulp after a drenching, the fabric type can be rolled into a ball under water—and then smoothed out and read as easily as before. In addition to its value as a navigational aid, it may be used as a head covering for protection from the sun, to catch rain for drinking water, and when supported by two oars may even serve as a small sail. They are yellow in color so as to be easily seen as a distress signal.

Within the space of 26 by 38 inches, it contains information vital for survival, especially the prevailing winds and ocean currents that may carry him to safety.

The Army has prepared similar pocket handkerchief maps for fliers forced down at sea.

Color Printing

The Navy having adopted red lights for night use

aboard planes and surface craft, it became necessary to change the colors which had previously been shown on nautical and aeronautical charts for naval use.

It was found that red, yellow, and orange tints became invisible when viewed under a red light. Land areas previously shown in buff were changed to light gray. Orange dots marking lighted aids to navigation have been changed to magenta. Blue shading used to represent shoal water was retained, while mud flats are shown by a composite of both the blue and gray colors. Green has been retained for land tints on some aeronautical charts and brown to distinguish color gradients. While all of these colors lose their identity under the red light, they do not lose their contrasting shades.

Special Maps and Diagrams

Many special maps, charts, and diagrams have been developed by the Hydrographic Office for use by both sea and air forces but some are of such a nature that they can not be discussed at the present time.

Among those which can be mentioned are the moonlight charts showing the brightness of the moon at various times and locations and indicate when darkness will cover a raid on enemy-held territories.

"Approach and landing charts" are available which will enable flyers of average skill to make safe landings in totally unfamiliar and obscure places.

Special charts of certain areas showing, in addition to topographic details, oblique aerial views permitting easy identification proved to be of great value to Army and Navy air forces.

An improved star finder and identifier, developed by the Hydrographic Office, eases the task of aerial navigators especially when clouds obscure a part of the night sky.

Many technical manuals and other special publications of value to the sea and air navigator but too numerous to mention here, are published and distributed to operating forces.

Waterproofing and Fireproofing of Maps

The development of waterproofing and fireproofing materials for application to printed maps and charts has received some attention during the past two years. Both lacquers and plastic materials are now available for this purpose. Many of the recent techniques developed are covered by secrecy orders from the U. S. Patent Office, and therefore may not be disclosed at the present time. The properties are familiar to many users, however, in such applications as paper.

Some of the lacquers investigated include clear, plasticized solutions of cellulose nitrate, cellulose acetate, vinylite resin, and acrylate resin, all of which may be applied with either a spray or brush.

Charts and other printed materials may also be rendered waterproof by lamination between sheets of vinylite plastic. While this treatment does not permit folding a sheet through 180°, it can be rolled. The surface is usually dull and reflections are practically eliminated. As with most other lacquers and plastics, pencil marks are easily removed.

Production

During the period of expansion between July 1, 1941 and January 1, 1945, the Hydrographic Office grew from an organization of 300 officers and civilians to its present staff of 1600 officers, enlisted personnel, and civilians, representing an increase of a little more than five times the number of employees.

In contrast to this growth, there was produced in the Fiscal Year ending June 30, 1941, 4,000,000 nautical, aviation and miscellaneous charts and publications, while during the Fiscal Year ending June 30, 1944, 42,000,000 charts and publications were produced or an increase of a little more than ten times the 1941 production.

Much of this increase is the result of new developments and the improvement of former practices in which the Hydrographic Office has played a major part.

Acknowledgement

In the preparation of the foregoing article, the author has consulted, and wishes to make suitable acknowledgment of the following publications.

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* The dry bulb temperature and humidity maintained in the press rooms, plate storage rooms, and photographic laboratories are approximately the same as those maintained in standard paper testing laboratories.

New TAPPI Members

The Executive Committee of the Technical Association of the Pulp and Paper Industry has elected the following to membership:

Harry L. Acomb, Chemical Engineer, Durez Plastics & Chemicals, Inc., North Tonawanda, New York. Attended the University of Minnesota.

Gervase C. Blick, Technician, American Can Co., 11th Ave. & St. Charles Road, Maywood, Illinois, a 1944 graduate of Lawrence College.

Charles J. Campbell, Senior Engineer, Johnson & Wierk, Inc., 415 Lexington Ave., New York, New York, a 1935 graduate of the University of Wisconsin.

Charles H. Chapman, Shift Supervisor, Hercules Powder Co., Lawrence, Kansas, a 1943 graduate of the New York State College of Forestry.

Lionel E. Dowd, Chemist, Development Department, Weyerhaeuser Timber Co., Longview, Washington, a 1940 graduate of the University of Washington.

George J. Howe, Chief Chemist, Plastic Film Corp., Plainfield, Connecticut, a 1932 graduate of Yale University.

Miles A. Joanen, Assistant Resident Chemist, Sinclair Refining Co., Houston, Texas, a 1928 graduate of St. Aloysius College.

Fernando H. Lopez, Investigator for the Bank of Mexico, Mexico, D. F., Mexico, a 1932 graduate of Los Angeles Junior College.

William L. Mackin, U. S. Naval Reserve, a 1937 graduate of St. Lawrence University.

Herbert J. Noble, Engineering Metallurgist, Pratt & Whitney Division, United Aircraft Corp., East Hartford, Connecticut, a 1926 graduate of Trinity College.

Edge Tearing Resistance of Paper*

TAPPI Suggested Method T 470 m-45

In this method a strip of paper 15.0 to 25.4 mm. (0.59 to 1.00 inch) wide is simultaneously torn at opposite points at the edges of the strip by means of a thin V-notched beam held in a stirrup which is fastened in one of the clamps of a paper tensile tester.

The use of this test shall be limited to papers which will fold evenly over the V-notched beam.

Apparatus

1. *Finch Edge-tear Stirrup* (Fig. 1). This shall be used attached to a suitable pendulum-type tensile strength testing machine. The stirrup consists of a thin steel plate which forms a horizontal beam supported on edge by the ends of a stirrup-shaped frame. The thin metal tang of the stirrup frame is fastened in the lower clamp of the tensile tester so that the vertical center line of the stirrup coincides with the line connecting the midpoints of the upper and lower clamps. The horizontal beam is removable from the stirrup frame and two beams of different thicknesses are furnished for use with papers of different thickness ranges. The edge of the beam forms a shallow V-notch, the side of which subtend an angle 150 ± 1°. The sides of the V-notch are semicircular in cross-section and are formed either by filing and scraping with a semicircular shaped scraper or by soldering a drill rod of a diameter equal to the thickness of the beam, to the edges of the V-notch. In either case the edges of the V-notch shall be smooth and straight.

2. *Tensile Tester.* This shall be pendulum type, preferably equipped with two or three different pendulum weights and corresponding scales of different capacities, including scales with capacities of 0 to 1 kg. (0 to 2.2 pounds) and 0 to 5 kg. (0 to 11 pounds). It shall conform to the requirement specified in TAPPI Standard T 404 m.

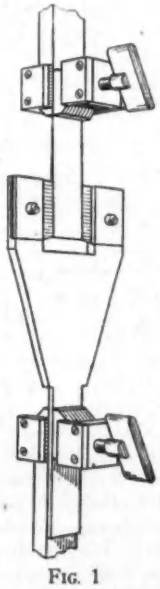

FIG. 1

Test Specimen

The specimens for test shall be strips cut with edges clean, straight, and parallel, in the two principal directions of the paper. The specimens shall be not more than 25.4 mm (1.0 inch) nor less than 15.0 mm. (0.59 inch) wide and not less than 25.4 cm. (10 inches) long, preferably somewhat longer. The specimens shall be conditioned for testing according to TAPPI Standard T 402 m.

Note: A conventional type of photo paper cutter especially designed for accurately cutting narrow test specimens is preferred. It is particularly important that its cutting edges be smooth and sharp.

Procedure

The test shall be made in an atmosphere conditioned according to TAPPI Standard T 402 m.

Attach a beam of the proper thickness to the stirrup frame. The beam thickness shall be selected with reference to the paper thickness as follows:

Range of Paper Thickness	Beam Thickness
0.030 inch and less	0.050 ± 0.002 inch
Over 0.030 inch	0.100 ± 0.002 inch

Fasten the thin tang of the stirrup in the lower clamp of the tensile tester so that the vertical center line of the stirrup coincides with the line connecting the mid-points of the upper and lower clamps of the testing machine, and so that the sides of the V-notch are symmetrically located with the line through the mid-points of the clamps.

Note: The stirrup may be fastened in the upper clamp, if desired. This procedure will require rebalancing the tensile tester to compensate for the weight of the stirrup.

Place the lower clamp of the machine so that the lower edge of the upper clamp is about 9 cm. (3.5 inches) above the V-notched beam. Thread the test specimen through the stirrup, under the beam, bring the two ends together and fasten them in the upper clamp. In this operation, most of the slack in the test specimen is taken up, but care must be exercised not to apply sufficient stress to start tearing the specimen. Apply the load to the test specimen at a rate such that the specimen shall be torn through in not less than 5 nor more than 15 seconds. The application of the first increments of load to the specimen should be made as slowly as possible to minimize abnormal strains due to inertia effects. Record the maximum load required to tear each specimen.

At least ten and preferably twenty strips cut in each principal direction of the paper shall be tested.

Report

Report results obtained on strips torn in the machine direction as edge tearing resistance, machine direction, and report results obtained on strips torn across the machine direction as edge tearing resistance, cross direction.

The average maximum and minimum results shall be reported in grams for each principal direction of the paper, to two significant figures.

Reproducibility of Results

Duplicate determinations from different sets of samples from the same shipment and on different instruments are expected to agree within 5%.

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* This method is suggested by the Paper Testing Committee as being the most suitable to date. It is *not*, however, a TAPPI Standard. Criticisms are earnestly requested and should be sent to R. G. Macdonald, Secretary, Technical Association of the Pulp and Paper Industry, 122 E. 42nd St., New York 17, N. Y.

Maine-New Hampshire Receives Charter

The Maine-New Hampshire Group of the Technical Association of the Pulp and Paper Industry became a local section of the organization on October 26th at Orono, Maine. About 150 individuals attended the two-day session at the University of Maine. Clifford Patch of the Eastern Corporation presided.

On Friday morning, October 26th, there were plant visits to the Maine Seaboard Paper Mill at Bucksport, the Eastern Mill at So. Brewer, Penobscot Chemical Fibre Company at Old Town.

Two papers were presented at the technical session on Friday afternoon in Aubert Hall. R. F. McNutt of the Bauer Bros. Company, Springfield, Ohio, reviewed the subject of semichemical pulping and pointed out that TAPPI Bulletin No. 53 is the best general description of the process given to date. This bulletin item was prepared by John McGovern of the Forest Products Laboratory. Mr. McNett showed a number of samples of papers and boards made from semichemical pulp at low cost.

J. G. L. Caulfield of the Eastern Corporation talked on Methods of Evaluating Pulp Woods and Wood Pulp. This related primarily to the laboratory that may be forced to make these evaluations with a minimum of testing when making experimental cook runs. Since most of the tests are use tests it is important to know the use to which the pulp is to be put and use tests that will show these properties. Wood tests at the Forest Products Laboratory used in connection with experimental cooks include: diameter, age, rings per inch, density, moisture, % heartwood, % sapwood, total cellulose, alpha cellulose, lignin, total pentosans, pentosans in cellulose, alcohol benzene solubility, ether solubility, 1% NaOH solubility, hot water solubility. There are 16 items most of which supply necessary information.

In evaluating pulp, McCaufield indicated that he usually used a laboratory beater to prepare for strength tests. Basis weight, burst, tear and freeness are probably sufficient in most cases. Fold is important but requires time and can be made later. Tensile follows burst so well it can be eliminated in some cases.

Selecting chemical tests is more difficult since there are so many to choose from. If the pulp is to be bleached, then permanganate number or some similar quick tests is worth making. Actual bleach consumption can wait but should be done sooner or later because permanganate number does not tell the whole story. Viscosity correlates well with pulp quality and is worth doing. So is alpha cellulose. Ether extract is necessary if the wood showed enough pitch originally to make that an issue. Total cellulose and lignin tests are usually not necessary. One per cent caustic solubility on an unbleached pulp never seems to correlate with anything else. Pentosan tests are valuable but since they seem to follow strength tests well enough they can wait.

A round-table discussion led by E. L. Lamb of the Oxford Paper Company followed the presentation of these two papers which were presented primarily to promote discussion.

In the evening there was a dinner at Estabrook Hall at which W. E. Brawn of the Pejepscot Paper Company presided as toastmaster. President Arthur A. Hauck of the University of Maine was introduced and he outlined some of the plans of the University for the future. He, in turn, introduced Roy P. Whitney, formerly of the M.I.T. Dept. of Chemical Engineering who represented the first major step in the U. of M. postwar program, namely to coordinate the work at the University with the technical needs of the industries of the State.

R. G. Macdonald, Secretary-Treasurer of the national Association was called upon to make the official presentation of the Charter establishing the Maine-New Hampshire Group as a Section of the Technical Association of the Pulp and Paper Industry. Mr. Macdonald gave a history of the development of technology in the industry and an account of the formation of the other sections of the Association. He then presented to Clifford Patch, Chairman of the Section, the Section's charter, a gavel to be used by chairmen at future meetings and a 10x6 foot banner on which large letters spelling Maine-New Hampshire TAPPI was sewn.

On Saturday morning a large group turned out at Aubert Hall to see the exhibit of operating control instruments and to hear remarks by representatives of a number of instrument manufacturers. The interest in this subject was considerable and following the talks discussion continued for an hour or more.

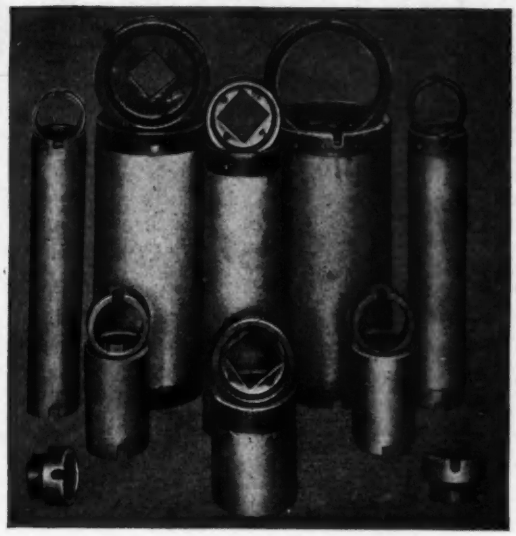
Following a buffet luncheon, the meeting adjourned and most of those present attended the football game between the U. of Maine and Massachusetts State.

Those present included: A. B. Andrews, John P. Bainbridge, N. I. Bearce, C. T. Bockus, W. E. Brawn, P. D. Bray, A. F. Brunell, E. R. Burling, W. F. Butcher, F. A. Burningham, R. D. Carter, R. Christiansen, W. E. Cobath, Joseph E. Connell, J. C. Dean, P. A. Donaghy, I. B. Douglass, J. H. Doughty, Frederick Fuller, A. P. Gregory, Charles Harris, W. A. Ketchen, J. W. King, E. L. Lamb, Raymond Lear, Ralph M. Leighton, H. S. Leonard, A. M. Lund, Ottie McCullum, R. F. McNett, H. H. Morton, F. W. O'Rourke, J. L. Parsons, H. E. Pratt, E. S. Redman, A. E. Regnier, E. E. Sawyer, F. A. Soderberg, A. H. Staffon, J. H. Snyder, F. E. Sorensen, W. J. Stearns, W. J. Sullivan, E. L. Tweksbury, W. L. Tilley, W. V. Torrey, V. C. Totman, F. O. White, F. A. Whitman, R. Cameron Whitney, R. P. Whitney, A. B. Williams, A. B. Wood, Jr., Jack Wright, Charles A. Brautlecht, D. B. Lovejoy, C. N. Loveland, S. V. Lorthen, J. J. Thomas, James McAlear, John G. L. Caufield, Stanley J. Johnson, J. Alfred Bicknell, T. J. Carlin, Earle D. Moiles, J. P. Jones, Floyd G. Scammon, J. A. Rogers, Stephen A. Barry, H. H. Michelmore, Henry C. Press, H. O. Ehrisman, H. P. Waldenmyer, J. G. Bullard, Lyle C. Jenness, R. A. Barnes, F. J. Reynolds, A. Guy Durgin, E. W. Keith, A. E. Jones, Gust C. E. Johanson, Robert Buck, R. G. Macdonald.

The Story of Linen

The Chemical Publishing Company has recently issued The Story of Linen by William F. Leggett of Rayon Textile Monthly (103 pp. 5¼ x 8). This is a popular style book giving for the first time an authentic and concise history of linen. In it is given the story of flax and linen as developed in Egypt, Palestine, Greece, Rome, Flanders, France, England, Ireland, Scotland and Colonial America. Sections are also devoted to ramie, hemp, sisal and jute. Although this book is of prime interest to textile workers it should be of interest to all interested in natural fibers.

Copies may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry, 122 East 42nd Street, New York, N. Y., at $2.75 per copy.



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New York Paper and Pulp Market Review

Demand For Paper Continues Strong In Major Grades — Future Pulpwood Supply Made Uncertain By Short Labor Supply—Waste Paper Short In News and Corrugated Grades — Rags Are Active.

Office of the PAPER TRADE JOURNAL,
Wednesday, October 31, 1945.

Demand in the wholesale paper market continues strong in all major grades. With inventories low, the supply situation is likely to continue relatively tight for the remainder of the year. Production in paper and paperboard is high, at 96.5% for paper, and at 93.0% for paperboard. The current over-all outlook in the paper industry is more favorable than in some other major industries. Labor conditions, uncontrolled as at present, threaten to spread widely and to seriously impede the return to a more normal peacetime economy.

In view of the high and still higher production costs anticipated, mainly due to higher wages, the price problem appears almost hopeless of solution on the present ceiling schedules. A higher price level appears inevitable if labor costs are substantially increased to satisfy the demands of labor leaders. A compromise at from 10 to 15% higher pay, seems very probable, in which circumstance, the present OPA price structure must be equitably revised.

The declining collections of waste paper and the slow return of labor back to the mills at lower than defense work pay, makes the future output of pulpwood uncertain, especially in the South.

Paper production for the week ended October 20 was estimated at 96.5%, compared with 92.7% for 1944, with 88.8% for 1943, with 91.6% for 1942, and with 106.4% for the corresponding week in 1941.

Paperboard production for the week ended October 20 was 93.0%, compared with 94.0% for 1944, with 94.0% for 1943, with 81.0% for 1942, and with 100.0% for the corresponding week in 1941.

Wood Pulp

Pulp producers and buyers of market pulp have recommended that the present delivered price system, included in OPA regulations, be continued for the reconversion period the specified maximum freight allowances to be absorbed by the sellers. The proposal to establish an ex-dock pricing system by OPA, in accordance with pre-war practice, is opposed by both a large segment of buyers and sellers at the present time.

Rags

Demand for new cotton cuttings continues active. Supplies are below expectations of a few weeks back, when plans were reported for a resumption of increased activity in the cutting-up-trades. White shirt cuttings and bleached grades are in strong demand. Prices are strong at ceiling levels.

Demand for old whites and blues continues good at this date. Increased purchasing is reported this week in the roofing grades of old cotton rags. Demand from felting mills is reported in some quarters as well above supply. Prices are firm at ceiling levels.

Old Rope and Bagging

Manila rope continues scarce and more and more sisal hemp is being accumulated. Prices on all fibers, other than Manila, are fair to moderately firm. Prices are unchanged.

Reports from some quarters indicate a moderate current demand for scrap bagging. Trading is limited however, and demand for gunny is moderately active at this date, with supplies available, generally, in relative small quantities. Prices are unchanged.

Waste Paper

All grades of waste paper are in active demand, by paper, board, and roofing mills. News and corrugated supplies are reported relatively scarce at this date. Prices are strong at ceiling levels.

Boston Merchants to Dine Nov. 7

BOSTON, Mass., October 29, 1945—At the request of the National Paper Trade Association, the New England Paper Merchants Association, Inc., will hold a dinner meeting, including both Fine and Wrapping Paper Division, at the Boston City Club November 7, at 6 p.m. Arthur H. Chamberlain, William G. Leathers and J. Harry Londergan, National Association officers, will address the meeting.

Noman E. Scott, the new regional Executive Secretary, who will be presented at the meeting, will outline his ideas for the purpose of enhancing the welfare of the association and strengthening and expanding the organization.

Engeman Returns to M. & O.

MINNEAPOLIS, Minn., October 27, 1945—Lt.-Col. Leonard Engeman, the 39-year-old soldier whose quick action won a precious bridge at Remagen and sent the first American troops across the Rhine March 7, 1945, is back at his desk in the home office of Minnesota and Ontario Paper Company. A native of Redwood Falls, Minn. and graduate of the University of Minnesota, he served the Company as sales representative in Indianapolis and assistant district manager at Chicago in prewar years, before joining the headquarters sales staff.

Tells M. M. Plan in Philadelphia

PHILADELPHIA, Pa., October 29, 1945—Members of the Paper Trade Association of Philadelphia turned out in unprecedented number at their recent luncheon meeting in the Down Town Club, to hear Harry Londergan, statistical expert for the National Paper Trade Association, explain the projected new standards for making and selling paper.

Norman Beardsley Goes to Crossett

The Crossett Paper Mills, Crossett, Ark., has announced the appointment of Norman T. Beardsley as sales manager of the concern, effective November 1, 1945. Mr. Beardsley has been associated with the sales force of the Union Bag and Paper Company for some years.

CLAFLIN REFINER

CONTINUOUS BEATING: Three No. 2 Claflins in series. Furnish of Southern Bleached Kraft — 50 tons/day. Pulping operation—through three Claflins—to beaters used only for mixing—to Jordans for final cutting control to paper machine. Total of 540 h.p. on Claflins. Freeness drop from 685 c.c. to 310 c.c.

BATCH BEATING: No. 2 Claflin — Furnish of Southern Bleached Kraft—2,000# batch. Stock pumped from chest into Claflin to another chest. At end of 15 minutes and two passes, Freeness 548, a drop of 72 c.c. At end of 30 minutes, after 4 passes, Freeness 476, drop of 144 c.c. At end of 45 minutes and 6 passes, Freeness 400, drop of 220 c.c. Mullen 72%—548 c.c., 102%—476 c.c. and 145%—400 c.c.

Adaptable also for brushing out fibre bundles and lumps with minimum degree of cutting and reduction of Freeness. (Tissues).

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Hundreds of paper mill executives and engineers know that Kalamazoo Tile construction costs less—lasts longer—controls stock better—requires less maintenance—and is more flexible as to size or design in meeting production layouts.

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STARCHES

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QUALITY
UNIFORMITY
SERVICE

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CLINTON COMPANY
Clinton, Iowa

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, October 31, 1945.

BLANC FIXE—The market for blanc fixe is reported unchanged for the week. Current demand is reported fair. The pulp is currently quoted at $40 per ton, in barrels, at works; the powder is currently quoted at $60 per ton.

BLEACHING POWDER—Demand is currently reported active. Short supply reported due to larger exports. Bleaching powder is currently quoted at from $2.50 to $3.10 per 100 pounds. All prices in car lots, in drums, f.o.b. works. May output higher at 2,708,000 pounds.

CASEIN—OPA maximum prices on processed acid-precipitated casein are as follows: 10,000 pounds or more, 24 cents per pound; 2,000 pounds, 24¼ cents per pound; less than 2,000 pounds, 24¾ cents per pound, f.o.b. shipping point. Imported, 21 to 23 cents per pound. All requests filled.

CAUSTIC SODA—Supply situation continues tight. Current output reported under heavy demand. Liquid shipments gain. Solid caustic soda is currently quoted at $2.30 per 100 pounds. The flake and ground are currently quoted at $2.70 per 100 pounds. All prices in car lots, in drums, f.o.b. works.

CHINA CLAY—Demand for some grades of china clay is reported fair this week. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay is quoted at from $12 to $22 per ton, at mines. Imported china clay is currently quoted at from $13 to $25 per long ton, ship side.

CHLORINE—Supply currently rather tight due to labor difficulties. Prices unchanged. Chlorine is currently quoted at $1.75 per 100 pounds, in single-unit tank cars, f.o.b. works.

ROSIN—No offerings or sales. OPA prices: "G" gum rosin at $6.74 per 100 pounds, in barrels, Savannah. "FF" wood rosin is currently quoted at $6.70 per 100 pounds in barrels, New York. Average price of 70% gum rosin size is currently offered at $6,95 per 100 pounds, f.o.b. works.

SALT CAKE—Demand reported fair. Market firm. Quotations on salt cake continue to remain unchanged. Domestic salt cake is currently quoted at $15 per ton; chrome cake at $16 per ton.

SODA ASH—Market demand for soda ash continue heavy. Labor difficulties decreasing. Bagged lot shipments gain. Prices continue unchanged. Prices on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Market supply of cash corn smaller this week. Shipments moderate. Corn prices are steady. Starch quotations continue unchanged. Pearl is currently quoted at $3.72 per 100 pounds. The powdered grade is currently quoted at $3.83 per 100 pounds. All prices f.o.b. Chicago.

SULPHATE OF ALUMINA—Supply situation reported favorable. Quotations are unchanged. Prices on the commercial grades are quoted at from $1.15 to $1.25 per 100 pounds. The iron free is currently quoted at $1.75 per 100 pounds. All prices in car lots, in bags, f.o.b. works.

SULPHUR—Demand is reported active for sulphur. Quotations on all grades continue unchanged. Annual contracts are currently quoted at $16 per long ton, f.o.b. mines. The current contract prices at Gulf Ports remains unchanged at $17.50 per long ton.

TALC—The market for domestic talc is reported fair this week. Quotations unchanged. Domestic grades are quoted at from $16 to $21 per ton, at mines. Canadian $24 per ton. All prices in car lots.

MARKET QUOTATIONS

All market quotations, excepting those otherwise designated as official OPA maximum prices, are based on the manufacturers' price level as of October 1-15, 1941; maximum wholesale prices are based on the merchants' maximum prices for stipulated quantities at a quoted price to all customers of a like class, as shown by the merchant's sales records of goods delivered during March, 1942. A merchant's price list in effect in March 1942, showing quotations of actual shipments, will establish the current maximum prices.

Paper

(Delivered New York)

Standard News, per ton—

Roll, contract	*$61.00	@	—
Sheets	69.00	@	—

* OPA Maximum Price.

Kraft—per cwt.—Carload Quantities Zone A, Delivered

Superstandard Wrapping	*$5.25	@	—
No. 1 Wrapping	*5.00	"	—
Standard Wrapping	*4.75	"	—
Standard Bag	*4.375	"	—

* OPA Manufacturers' Prices.

Tissues—Per Ream—Carlots

White No. 1	1.12½	"	—
White No. 1 M. G.	1.10	"	—
White No. 1½	1.00	"	—
White No. 2	.90	"	—
Anti-Tarnish M.F.	1.20	"	—
Colored	—	"	—
Kraft	.95	"	—
Manila	.90	"	—

Toilet—1 M. Sheets—Per Case

Unbleached	4.25	"	—
Bleached	5.70	"	—
Unbl. Toilet, 1 M.	4.16	"	—
Bleached Toilet	5.70	"	—

Paper Towels, Per Case—

Unbleached, Jr.	2.20	"	—
Bleached, Jr.	3.20	"	—

Manila—per cwt.—C. l. f. a.

No. 1 Jute	11.25	@	—
No. 1 Manila Wrapping, 35 lb.	6.00	"	6.25

Boards, per ton—

News	*50.00	@	—
Chip	*50.00	"	—
Sgl. Mla. Lt. Chip	*62.00	"	—
White Pat. Coated	*75.00	"	—
Kraft Liners 50 lb.	*63.00	"	—
Binders Boards	84.00	"	116.00

* OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5.; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds		Ledgers
100% Rag Est. No. 1	$39.10 @	$46.00	$40.25 @ $47.25
100% Rag	32.20 "	37.75	33.35 " 39.25
85% Rag	.... "	....	29.90 " 35.00
75% Rag	23.00 "	27.00	24.15 " 28.25
65% Rag	.... "	....	22.80 " 27.75
50% Rag	18.70 "	22.75	19.90 " 24.25
25% Rag	16.40 "	20.00	17.55 " 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds		Ledgers
No. 1	$10.55 @	$12.75	$11.70 @ $14.25
No. 2	9.65 "	11.75	10.80 " 13.25
No. 3	9.20 "	11.25	10.35 " 12.50
No. 4	8.90 "	10.75	10.05 " 12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper. Delivered in Zone 1:

No. 1 Glossy Coated	$13.65 @		$13.[illegible]
No. 2 Glossy Coated	12.40 "		14.00
No. 3 Glossy Coated	11.60 "		12.[illegible]
No. 4 Glossy Coated	11.15 "		12.75
No. 1 Antique (watermarked)	10.25 "		11.75
No. 2 Offset	9.60 "		11.00
A Grade E. F.	9.35 "		10.75
A Grade S. & S. C.	9.60 "		11.00
B Grade E. F.	8.85 "		10.25
B Grade S. C.	9.10 "		10.50
C Grade E. F.	8.55 "		9.75
C Grade S. C.	8.80 "		10.00
D Grade E. F.	8.25 "		9.50
D Grade S. & S. C.	8.50 "		9.75

Ivory & India wt $.50 cwt. extra.

Wood Pulp

OPA Maximum Prices and Canadian Manufacturers Prices, Less Freight Not Exceeding OPA Allowances.

Bl. Softwood Sulphite	$86.00
Unbl. Softwood Sulphite	74.00
Bl. Hardwood Sulphite	83.00
Unbl. Hardwood Sulphite	71.50
Bl. Mitscherlich	81.00
Unbl. Mitscherlich ..72.00 @	82.00
N. Bleached Sulphate	86.00
S. Bleached Sulphate	79.00
N. Semi-Bleached Sulphate	82.00
S. Semi Bleached Sulphate	75.00
N. Unbl. Sulphate	75.00
S. Unbl. Sulphate	69.00
Bl. Soda	76.00
Unbl. Soda	72.00
Groundwood	80.00

Transportation Allowances

Applying to Producers of Wet Wood Pulp.

	Below 50% Air Dry Weight
Northeast	$13.50
Lake Central	13.50
Southern	16.00
West Coast (in area)	10.50
West Coast (out area)	16.50

	50%-80% Air Dry Weight
Northeast	11.50
Lake Central	11.50
Southern	14.00
West Coast (in area)	9.50
West Coast (out area)	15.50

Applying to Producers of Dry Wood Pulp.

	Above 80% Air Dry Weight
Northeast	$8.50
Lake Central	8.50
Southern	11.00
West Coast (in area)	7.50
West Coast (out area)	13.50

Should freight charges actually exceed these allowances, the difference may be added to the maximum prices

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	6.50	@	7.25*
Silesias No. 1	—	"	5.75*
New Unbleached	6.75	"	7.50*
Blue Overall	—	"	5.50*
Fancy	—	"	3.50*
Washables	—	"	3.00*
Bleached Khaki Cuttings	—	"	4.25*
Unbleached Khaki Cuttings	—	"	2.50*

*OPA Maximum Prices

WOOD
METAL
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RODNEY HUNT
ROLLS
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STRONGER
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due to patented features
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AMORPHOUS WAXES
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LAMINATING PAPER . . GLASSINES . . WATER-PROOFING . . GREASE PROOFING . . EXTENDERS FOR PARAFFIN, FOOD CONTAINERS, CONTAINER LININGS, ADHESIVENESS AND PROTECTIVE COATING.

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Solicit your inquiries for REPAIRS or NEW EQUIPMENT which will receive our prompt attention as rapidly as controlled materials and skilled labor are made available.
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Paper Trimmer.
PAPER BAG MACHINERY

A TYPE AND SIZE FOR EVERY NEED IN MILL, FINISHING ROOM, CONVERTING PLANT
SAMUEL M. LANGSTON COMPANY, Camden, New Jersey

The Trade-Mark of
DEPENDABLE FELTS

The Waterbury Felt Co.
SKANEATELES FALLS, N. Y.

Old Rags

White, No. 1—			
Repacked	*3.80	"	—
Miscellaneous	*3.20	"	—
White, No. 2—			
Repacked	*2.90	"	—
Miscellaneous	*2.65	"	—
Thirds and Blues—			
Repacked	*2.20	"	—
Miscellaneous	*1.30	"	—
Roofing Rags—			
No. 1	*1.55	"	—
No. 2	*1.45	"	—
No. 3 (bagging)	*1.35	"	—
No. 4	*1.35	"	—
No. 5A	*1.35	"	—
Old Manila Rope	5.75	"	—

* OPA Maximum Prices.

Foreign Rags

Pre-War Quotations
All Prices Nominal

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—
No. 4 White Linens	2.25	"	3.25
No. 1 White Cotton	4.25	"	4.75
No. 2 White Cotton	3.25	"	3.75
No. 3 White Cotton	2.50	"	3.00
No. 4 White Cotton	1.90	"	2.20
Extra Light Prints	2.00	"	2.40
Ord. Light Prints	1.75	"	2.15
Med. Light Prints	1.55	"	1.95
Dutch Blue Cottons	2.25	"	2.50
French Blue Linens	3.00	"	—
Checks and Blues	2.00	"	—
Linsey Garments	1.90	"	2.00
Dark Cottons	1.50	"	1.60
Old Shopperies	1.30	"	1.45
New Shopperies	1.45	"	1.50
French Blues	2.25	"	2.50

BAGGING

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.25	@	3.30
Wool Tares, light	3.25	"	3.50
Wool Tares, heavy	3.50	"	3.75
Bright Bagging	3.25	"	3.50
Manila Rope—			
Foreign	—	"	—
Domestic	*5.75	"	—
Jute Threads	5.50	"	—
No. 1 Sisal Strings	*4.00	"	—
Mixed Strings	2.00	"	—

* OPA Maximum Prices.

Old Waste Papers

(F. o. b. New York)
OPA Maximum Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Envelope Cuts	3.12½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, one cut	2.37½	"	—
No. 1 Soft White Shavings	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
Mixed Groundwood Colored Shavings	.90	"	—
Overissue Magazines	1.67½	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
Mixed Books	1.10	"	—
No. 1 White Ledger	2.30	"	—
No. 2 Mixed Ledger, colored	2.00	"	—
New Manila Envelope Cuttings, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
Extra Manilas	1.95	"	—
Mixed Kraft, Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
Triple Sorted, No. 1 Brown Soft Kraft	2.50	"	—
New 100% Kraft Corrugated Cuttings	2.25	"	—
No. 1 Assorted Old Kraft	1.75	"	—
New Jute Corrugated Cuttings	.90	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.40	"	—
Box Board Cuttings	.72½	"	—
White Blank News	1.65	"	—
Overissue News	1.10	"	—
No. 1 News	1.00	"	—
No. 1 Mixed Paper	.95	"	—
Old Corrugated Containers	.82½	"	—
Mill Wrappers	1.10	"	—
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.75	"	4.00

Twines

All Prices Nominal
(F. o. b. Mill)
(Soft Fiber)

Coarse Polished—			
India	.21	@	—
White Hemp	.21	"	—
Fine Polished—			
Fine India	.26	"	—
Unpolished—			
Box	.17½	"	—
Paper Makers	.17	"	—
Tube Rope	.19	"	—
Wall Paper	.20½	"	—
Wrapping	.23	"	—
Soft Fiber Rope	.19	"	—
Cotton	.25	"	—
(Hard Fiber)			
Medium Java	.18	"	—
Mex. Sisal	.16	"	—
Manila	—	"	—

Old Papers

(F. o. b. Phila.)
OPA Maximum Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	3.37½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
Soft White Shavings, one cut	2.50	"	—
White Blank News	1.65	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Hard White Shavings, ruled	2.50	"	—
No. 1 Soft White Shavings	2.50	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
Mixed Groundwood Colored Shavings	.90	"	—
Overissue Magazines	1.67½	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
Mixed Books	1.10	"	—
No. 1 White Ledger	2.30	"	—
No. 2 Mixed Ledger, colored	2.00	"	—
New Manila Envelope Cuttings, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
Extra Manilas	1.95	"	—
Mixed Kraft, Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
Triple Sorted, No. 1 Brown Soft Kraft	2.50	"	—
New 100% Kraft Corrugated Cuttings	2.25	"	—
No. 1 Assorted Old Kraft	1.75	"	—
New Jute Corrugated Cuttings	.90	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.40	"	—
Box Board Cuttings	.72½	"	—
White Blank News	1.65	"	—
Overissue News	1.10	"	—
No. 1 News	1.00	"	—
No. 1 Mixed Paper	.95	"	—
Old Corrugated Containers	.82½	"	—
Mill Wrappers	1.10	"	—

Bagging

(F. o. b. Phila.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.00	@	3.50
No. 1 Clean bright—			
Sisal Strings	.04	"	—
No. 2 Clean bright—			
Sisal Strings	.03	"	—
Sisal Jute	.02½	"	.02¾
Scrap—			
No. 1	3.25	"	3.50
No. 2	1.75	"	1.80
Wool Tares, heavy	4.00	"	4.25
Wool Tares—			
Foreign	(nominal)		
Domestic	4.25	"	—
Aust. Wool Pouches	—	"	3.65
New Zealand Wool Pouches	—	"	3.50
New Burlap Cuttings	4.75	"	5.00
Heavy Baling Bagging	4.00	"	4.25
Paper Mill Bagging	2.50	"	3.00
No. 2 Roofing Bagging	1.35	"	—

* OPA Maximum Prices.

PHILADELPHIA

Domestic Rags (New)

(Price to Mill)

Shirt Cuttings—	
New White No. 1	.07¼
New White No. 2	.05¾
Light Silesias	.05¾
Black Silesias, soft	.03¾
New Unbleached	.07½
Washable Prints	.04¼
Washable No. 1	.03
Blue Overall	.05½
Cottons—According to grades—	
Washable Shredding	.01¾
Fancy Percales	.04¾
New Black Soft	.03¾
Khaki Cuttings—	
Unbleachable Cotton Cuttings	.03½
Bleachable Cotton Cuttings	.04¾
Men's Corduroy	.03½
Ladies' Corduroy	.03
Cottonades	.03¾

Domestic Rags (Old)

White No. 1—Repacked	3.80	@	—
Miscellaneous No. 1	3.20	"	—
Miscellaneous No. 2	2.65	"	—
White No. 2—Repacked	2.90	"	—
Thirds and Blues—			
Miscellaneous	1.80	"	—
Repacked	2.20	"	—
Black Stockings—			
(Export)	Nominal		
Roofing Stock—			
Foreign No. 1	Nominal		
Domestic No. 1	1.55	"	—
Domestic No. 2	1.45	"	—
Roofing Bagging	1.35	"	—
Old Manila Rope	5.75	"	—

Bagging

(F. o. b. Phila.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.00	@	3.50
No. 1 Clean bright—			
Sisal Strings	.04	"	—
No. 2 Clean bright—			
Sisal Strings	.03	"	—
Sisal Jute	.02½	"	.02¾
Scrap—			
No. 1	3.25	"	3.50
No. 2	1.75	"	1.80
Wool Tares, heavy	4.00	"	4.25

BOSTON

Old Papers

(F. o. b. Boston)
OPA Maximum Prices, Baled

No. 1 Hard White Shavings, unruled	2.87½	@	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White and Colored Tabulating Cards	2.25	"	—
Ground Wood Tabulating Cards	1.35	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.95	"	—
Overissue News	1.10	"	—
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.40	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	2.75	@	2.90
Sisal Rope No. 1	*4.75	"	—
Sisal Rope No. 2	* —	"	4.00
Mixed Rope	—	"	1.55
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope	4.50	"	5.00
Jute Carpet Threads	3.00	"	3.50
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	3.00	"	3.25
South American	—	"	3.25

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.04½	@	.04¾
Fancy Percales	.04¾	"	.05
New White No. 1	.06¾	"	.07
New Light Flannelettes	.05½	"	.06
Canton Flannels, Bleached	.06	"	.06¼
Underwear Cutters, Bleached	.06¼	"	.06¼
Underwear Cutters, Unbleached	.05¾	"	.06
Silesias No. 1	.06	"	.06¼
New Black Silesias	.03	"	.03¼
Red Cotton Cuttings	.03½	"	.04
Soft Unbleached Blue Cheviots	.06½	"	.06¾
Fancy	.05½	"	.06
Washable	.02¾	"	—
Khaki Cuttings	.02¾	"	.03
O. D. Khaki	.03½	"	.03¾
Corduroy	.03¼	"	.03¾
New Canvas	.06½	"	.06¾
B. V. D. Cuttings	.06¾	"	.06¾

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	3.80	@	—*
Miscellaneous	3.20	"	—*
White No. 2—			
Miscellaneous	2.65	"	—*
Twos and Blues, Repacked	2.20	"	—*
Old Blue Overalls	2.25	"	2.50
Thirds and Blues, Repacked	2.20	"	—*
Miscellaneous	1.80	"	—*
Black Stockings	3.50	"	4.00
Roofing Stock—			
No. 1	1.55	"	—*
No. 2	1.45	"	—*
No. 3	1.35	"	—*
No. 4	1.35	"	—*
No. 5, Quality A	1.35	"	—*
Quality B	1.20	"	—*
Quality C	.95	"	—*
Old Manila Rope	5.75	"	—*

* OPA Maximum Prices.

Foreign Rags

(F. o. b. Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper

(F. o. b. Chicago)
OPA Maximum Prices, Baled

Shavings—			
No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
No. 1 White Ledger	2.30	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
White Blank News	1.65	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
No. 1 Assorted Old Kraft	1.75	"	—
Overissue News	1.10	"	—
No. 1 News	1.00	"	—
No. 1 Mixed Paper	.95	"	—
No. 1 Roofing Rags	1.55	"	—
No. 1 Roofing Bags	1.45	"	—
Misc.	2.15	"	—
No. 1 White Ledger	2.30	"	—
No. 2 Ledger, colored	2.00	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
Overissue Magazines	1.67½	"	—
New Manila Envelope Cuttings	2.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.95	"	—
Box Board Cuttings	.72½	"	—
Kraft Corrugated Cuttings	2.25	"	—
Old Corrugated Containers	1.40	"	—
Overissue News	1.00	"	—
No. 1 News	1.00	"	—

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We are looking for a young man, preferably under 36, with good personality, and with technical and papermaking background, to represent us in the paper industry.

Our company is well established and well known throughout the industry — alert, progressive, and growing steadily.

The man we choose will receive a thorough training in our manufacturing processes, and for the right man it means a steady position with a sound future.

Give full details on education and experience and some idea of salary requirements. Address Box 45-697, care of Paper Trade Journal. N-1

WANTED

Draftsmen and Designers on Paper-Machinery, excellent wages, pleasant working and living conditions.

Write or phone 1200

BAGLEY & SEWALL COMPANY
Watertown, New York

N-15

COATING CHEMIST
FOR CONVERTING PLANT
LOCATED IN THE NEW
YORK METROPOLITAN AREA

List all information in first letter and interview will be arranged. Address Box 45-670 c/o Paper Trade Journal. N-1

WANTED

Graduate Chemist or Chemical Engineer with a technological background in the field of emulsions. Special consideration will be given to an individual with experience in the development and manufacture of wax and resin emulsions. This is an excellent opportunity for a man qualified for the position. Write fully of experience and qualification. Replies will be treated confidentially. Box 45-663 care Paper Trade Journal. N-8

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R. W. BIXBY, INC.
117 Delward Bldg., Buffalo 2, N. Y. TF

WANTED — ENGINEERS — Capable of handling general engineering work in established consulting engineers office specializing in pulp and paper mills. Address Box 45-469 care Paper Trade Journal. TF

MACHINE DESIGNER preferably with experience in paper mill or paper working machinery. Permanent position with good opportunity advancement. Location Brooklyn, New York. State complete details, age, experience and salary expected. Address Box 45-578 care Paper Trade Journal. TF

WANTED—One man to represent an Eastern paper converting mill through New York State. We will prefer one who has had some experience in paper sales, and who resides in the vicinity of Syracuse, N. Y. Address Box 45-596 care Paper Trade Journal. D-20

HELP WANTED

CHARLES P. RAYMOND SERVICE
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Specializing in Paper Mill Personnel
Positions Now Open

Board Mill superintendent
Plant engineers, mechanical engineers, master mechanics, chief (power) engineers, draftsmen and designers
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Man to do sheeting, slitting and re-winding of paper
Lining machine operator, machine and back tenders, beater engineers, and many others

We invite correspondence (strictly confidential) with employers seeking personnel and men seeking new positions. N-1

MERCHANDISE AND SALES MANAGER for nationally known paper bag manufacturing company seeking to develop sales of special purpose and transparent bags and flexible containers—opportunity—replies considered in strictest confidence—state experience and minimum compensation. Our employees aware of this advertisement. Address Box 45-529 care Paper Trade Journal TF

WANTED—Experienced Back Tender on Cylinder Machine. Apply Personnel Office, Southland Paper Mills, Inc., Lufkin, Texas. N-1

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Have perfected method of reducing production cost and improving pulp quality.

Installation will pay for itself in a short time.

Have been employed as Consulting Engineer by large company for period of years.

Looking for connection with concern which desires to increase profits.

Prefer medium size plant having sulphate or soda process.

Address Box 45-711 care Paper Trade Journal. N-8

CHIEF ENGINEER — Expert Master Mechanic and machine shop superintendent. Inventor and designer of papermaking and paper converting machinery, and processes. Supervisor of building construction, plant maintenance and plant layout. Expert on wage incentive, time study, production control, efficiency and cost control methods. Have built complete mills. Good executive and organizer. Open for engagement soon. Box No. 45-710 care Paper Trade Journal. N-15

DEVELOPMENT ENGINEER

Experienced in groundwood, sulphite, sulphate, papermill operation and control. Familiar with tub sizing, use of starches, glues, proteins, wet strength resins, waxes, wax emulsions. Know bleaching and stock preparation. Experienced in process development and development of special use papers. Now in service expecting immediate release. Address Box 45-698 care Paper Trade Journal. N-22

SALES ENGINEER with knowledge of Pulp and Paper Machinery and experience in merchandising. Write giving background, references and salary expected. Address Box 45-606 care Paper Trade Journal. TF

WANTED—Layout Man experienced on pulp and paper mill machinery. Give employment history and background in first letter. Valley Iron Works Co., Appleton, Wisconsin. N-1

BEATER ENGINEERS—Old established Southern California mill has an opening for two experienced beater engineers. Write full particulars. Address Box 45-638 care Paper Trade Journal N-1

WANTED—Machine Tenders, Backtenders, Windermen and Beater Engineers for cylinder machine making .009 Board, .016 Jute Liner and Imitation Kraft Wrapping Paper. Must have experienced men. Sangamon Paper Mills, 3915 S. LaSalle Street, Chicago, Illinois. N-8

CHEMIST having several years practical paper mill experience for paper research development, and control work, with large manufacturer of diazo sensitized reproduction papers. Give complete information regarding education, pertinent personal data and references in first letter. Address Box 45-665 care Paper Trade Journal. N-8

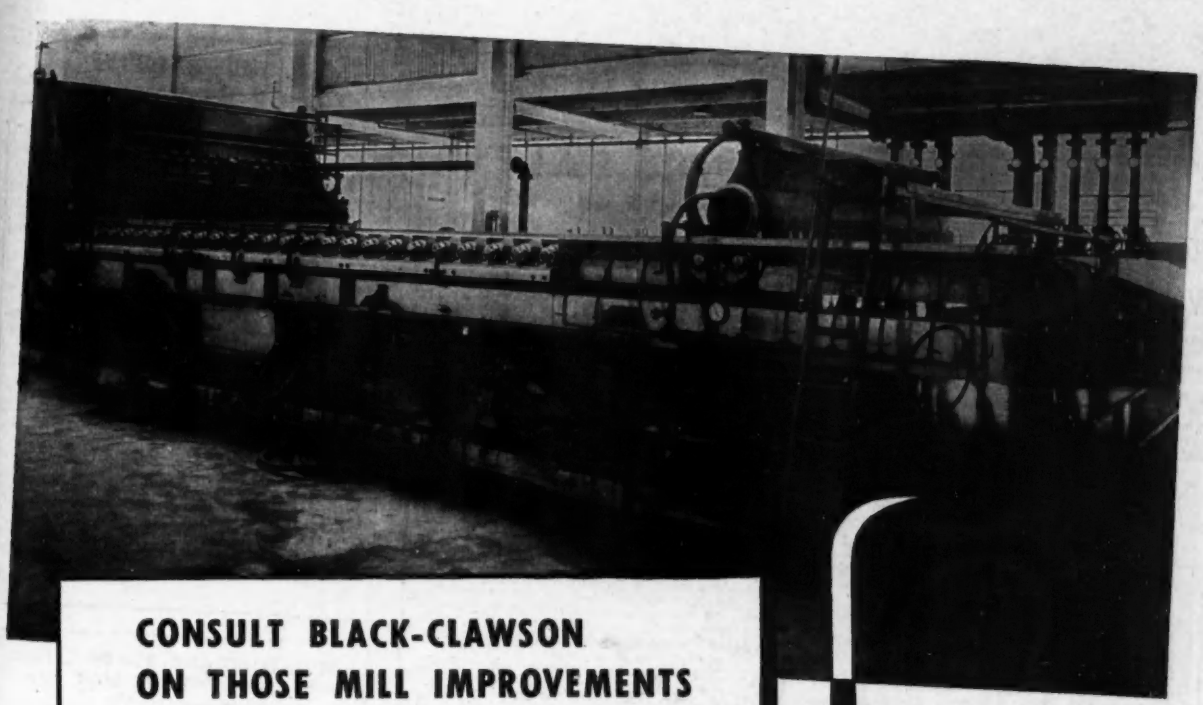
TOUR BOSS wanted to be trained for job of Assistant Superintendent of Roofing Felt Mill located in New Orleans. Send complete resume giving experience, etc. to Box 45-662 care Paper Trade Journal. N-1

WANTED—Draftsman and Designers on Paper Machinery. Excellent wages, pleasant working and living conditions. Write or phone 1200. Bagley & Sewall Company, Watertown, New York. N-8

WANTED—Lining Machine Operator having experience with latest methods of lining all types papers to boxboards using dextrine and thermoplastic adhesives. New lining department recently established with new equipment. Need operator who can get good production as well as highly quality. Midwest location. Address Box 45-678 care Paper Trade Journal. N-15

WANTED—Experienced draftsmen on paper mill process and power plant piping. State experience, age, compensation and availability. Address Box 45-682 care Paper Trade Journal. N-1

WANTED—MACHINE TENDERS with experience on cylinder tissue and on stock preparation and in handling men. Modern mill located in Connecticut. Address Box 45-699 care Paper Trade Journal. N-8



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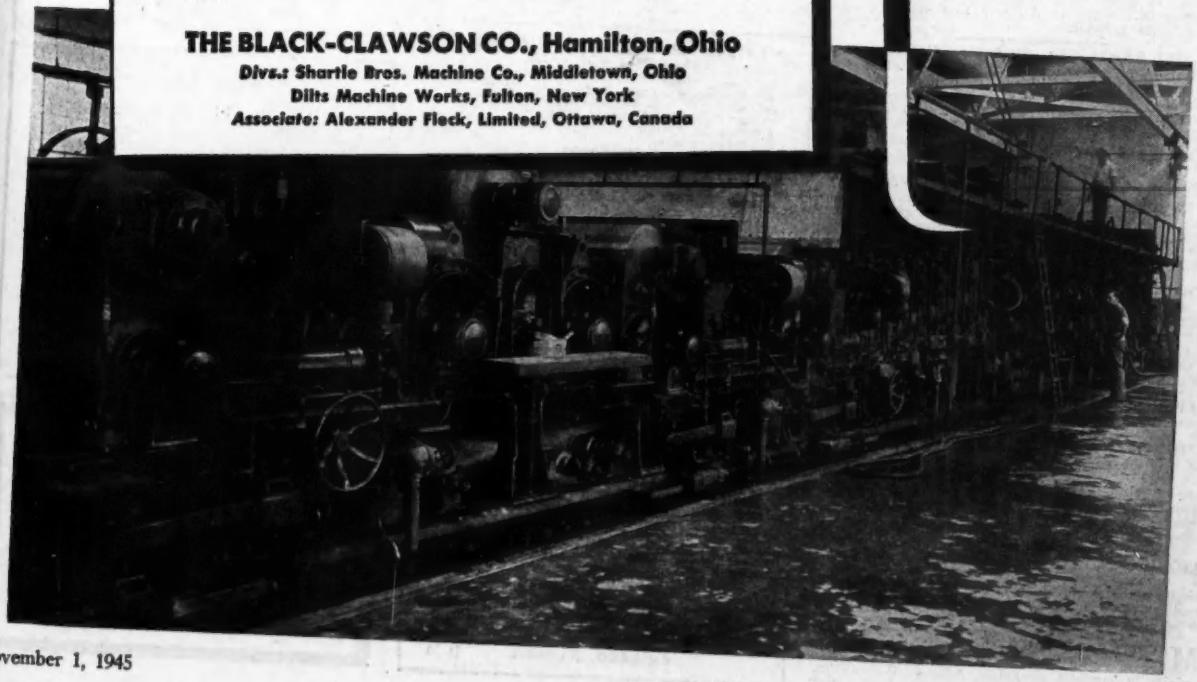

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ESTIMATOR—Experienced in all phases of folding cartons, including paraffined cartons and specialties. Excellent opportunity for right person with one of this industry's most progressive firms. Write, giving complete details in first letter, stating experience, age and salary expected. EMPIRE BOX CORPORATION, GARFIELD, N. J. N-15

WANTED—Millwright-Machinist — capable of taking complete charge of wall paper factory in New England. State experience with paper converting machinery and drying equipment. Give full information in letter. Address Box 45-700 care Paper Trade Journal. N-15

ENVELOPE ADJUSTER—Smithe, Adjustable Range, Roll Fed Machines. Permanent work. When replying give all details as to experience and salary wanted. Plant in New York City. Address Box 45-704 care Paper Trade Journal. N-1

SITUATIONS WANTED

ASSISTANT SUPERINTENDENT OR SUPERINTENDENT

Age 32. Jobs held—Fourth Hand to Spare Machine Tender, Assistant Superintendent. Technical education. Five years practical experience on book papers, plus five years in management, making kraft specialties, including creped. Fourdriniers. Dependable. Get along well with others. Address Box 45-555 care Paper Trade Journal. N-1

PAPER MILL SUPERINTENDENT—Now available. Seeks position Supt. or Asst. Supt. Converting grades, Kraft, Tissues. Address Box 45-671 care Paper Trade Journal. N-1

ENGINEER experienced in design, construction, maintenance and operation of mills, is open for temporary or permanent position. Address Box 45-668 care Paper Trade Journal. N-1

FIRST CLASS All around Master Mechanic. Construction. Maintenance in Fourdrinier, Cylinder Mills making board, tissue, kraft. Stea. Water Electric Power. Address Box 45-666 care Paper Trade Journal. N-1

SUPERINTENDENT—20 years experience in paper bag conversion of grocery, sacks and aniline or oil ink specialty bags. Capable of handling all bag shop problems. Thorough experience in supervision of help, maintenance and repairing of machines. Address Box 45-658 care Paper Trade Journal. N-8

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CHIEF CHEMIST of a southern kraft paper and board mill available. Young, aggressive and well experienced in kraft board, paper and pulp manufacture. Familiar with modern equipment and machinery. Can furnish excellent references. Address Box 45-701 care Paper Trade Journal. N-8

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FOR SALE

1—Saveall 36" x 136" Cylinder Mold equipped with anti-friction bearing and couch roll.
1—Valley Iron screw press.
1—#2 Miami Jordan.
1—#9 Emerson Jordan for direct connection to a motor, requires use of 400 H.P. motor.
1—Beloit 10 x 10 Triplex Pump, (late type), 50 tnn capacity, with motor.
1—Moore & White 10 x 12 Triplex Stock Pump.
2—2000 lb. Holyoke Beaters.
1—1000 lb. Dayton Beater.
1—Jones pulper — direct connected to 60 H.P. motor.
2—12 Plate Packer type flat screens with steel vats.
2—8 Plate Flat Screens.
1—12 Plate Flat Screen.
1—18 Plate Flat Screen with scraper.
13—Driers 60" x 154".
23—Driers 36" x 82".
1—Buffalo Pump—5500 g. p. m., direct connected to 100 H.P. Motor (50' head).
3—Worthington turbine well pumps, 300 g.p.m.—for 14' and 16'—with motor.
1—#4 Roots-Connersville Vacuum Pump.
2—65" Cameron tension for winders.
1—60" Hudson Sharp 2 shaft slitter and winder.
1—72" Kidder two drum slitter and winder.
2—Vickery Felt conditioners for 118" machine.
1—Vickery Felt conditioner for 106" machine.

Various sizes of Centrifugal Pumps. Write us regarding your particular requirements.

We are always in the market to purchase your surplus or idle machinery. What have you to offer?

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250 Frelinghuysen Ave.
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PAPER MILL & PAPER CONVERTING EQUIPMENT FOR SALE

34" Inman Slitter.
36" Sheridan Automatic Power Paper Cutter.
44" Seybold Holyoke Aut. mill type Power Cutter.
45" White Automatic Power Cutter.
41" Hamblet Sheeter
60" Finley Sheeter.
110" Hamblet heavy duty Sheeter.
68" Rice Barton & Fales Slitter & Rewinder, for use on dry end of paper machines.
New 62" Two-Roll Back Stand, handling rolls up to 30" diameter.
4 Waldron 30" Paper Reelers
Baling Machines, both hand and power.
40" Type SL Kidder Slitter.

THOMAS W. HALL COMPANY, Inc.
120 West 42nd St., New York 18, N. Y. TF

FOR SALE

50" Waldron 6-Roll Brush Coater & 84" Rewinder
48", 72" Automatic Power Paper Cutters with new knives
32", 40", 52" Single & Double Roll Coaters
14"x22", 20"x38" Thomson & 30"x50" Cottrell Die Cutters.
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ALSO CREASERS, SLITTERS, GLUERS, BOX STITCHERS, WRAPPERS, ENDERS, CORNER CUTTERS, SLITTERS & REWINDERS—all in many sizes and makes. All offered REBUILT & GUARANTEED. Write for Bulletin No. 124. Listing over 100 Paper & Board Converting Machines—now on our floor.

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CHICAGO, ILLINOIS D-20

FOR SALE

FOR SALE

10 Dryers 48" x 82" to 86" face, rebuilt, with frames, gears, bearings and new Johnson joints.
1 98" Rice Barton calender.
1 64" Hamblet sheet cutter with Mace piler
1 72" Finlay cutter with cast iron knife bar
1 76" Smith & Winchester undercut
1 Leith Walk screen
2 Moore & White Rotary Screens
2 Twelve plate flat screens
1 Twelve plate Monarch screen
1 90" Fourdrinier
1 72" Fourdrinier
1 48 x 44" Holyoke iron tub beater
1 52 x 42" Downingtown iron tub beater
1 60 x 60 Horne patent beater, 4" wood tub bronze bars
2 Noble & Wood Mammoth Jr. Jordans
1 No. 2 Dillon Jordan
1 Noble & Wood Monarch Jordan
2 Horne standard Jordans, one with stainless steel bars
1 No. 1 Lanneye pulper
1 No. 2 Lanneye pulper
2 Loring Rotaries 8 x 29, with drives and reducing valve, suitable for 75 lbs. pressure.

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One large Breaker Beater complete
One small Beater Complete
1—86" Diameter X 90" Face cylinder mold
1—8x8 Shartle Duplex plunger stock pump
1—New pair cast steel double suspension spring type beater bearings for 9" diameter journal —Noble & Wood beater roll. Never used
1—Used old style lighter beam for 8" diameter journal Noble & Wood beater
1—New reinforced design lighter beam for 8" diameter journal—Noble & Wood beater roll. Pattern No. 863. Never used.
1—250 KVA —23000-2300/4000 volts transformers
90—92" Face steel dryer felt rolls—1—7/16" journals
1—30" Face cast iron taper pulley—2 15/16" bore taper 31"x29½"
4—36" diameter x 83" face dryers
1—8" to 10" Cox & Sons Pipe threading machine
1—42" Noble & Wood Impeller for circulation stock in beater.

A visit to the mill would prove profitable as we have many items for sale to numerous to mention. See our superintendent Mr. O. P. Fussell at our plant in Walloomsac, New York.

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Mills: Walloomsac, New York
Main Office: 25 Vanderbilt Avenue
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3—Taylor Stiles Giant Rag Cutters.
2—Rotary Sheet Cutters, 1—60" and 1—42" wide. With slitting attachments and 24 roll double deck backstands.
1—56" Undercut Power Paper Cutter.
1—72" Seybold Automatic Knife Grinder.
1—72" Dietz Toilet Paper Perforator.
1—26" Special Dicing or Ribbing Machine.
1—30" Seven Roll Super Calender Stack.

All above machines complete with A.C., 3 phase, 60 cycle, 440 volt motor equipments.

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FOR SALE

36" Diameter Dryers 85" and 86" Face — 3 Deck — Complete with Stands, Gears and Bearings.

EMPIRE BOX CORPORATION
Garfield, New Jersey
TF

FOR SALE | FOR SALE | FOR SALE

Ross Paper Machinery Co., 265 Passaic St., Newark 4, N. J., Humboldt 2-2177

BEATERS
1—2500 lb. Downingtown Iron Tub.
1—750 lb. Downingtown Iron Tub.
2—1000 lb. Horne Iron Tub.
1—1200 lb. Holyoke Wood Tub.

CALENDER STACKS
1—11 roll Pusey & Jones. 104" face.
1—9 roll Rice Barton 99" face.
1—3 roll Moore & White 86" face.

CONVERTING EQUIPMENT
2—Hudson Sharp 63" Slitters and Folding Machines for converting facial tissue. With motors and starters.
1—Dietz 65" Toilet Converter. With motor and starter.
1—64½" Hudson Sharp Toilet and Toweling converter. With motors and starters.
3—Sanitary Napkin Machines. With motors and starters. Capacity 105 pads per minute each.
1—Bliss Double Head Stitcher.
1—Bliss Single Head Stitcher.
1—Bliss Box Assembling Machine.
1—66" Dietz Towel Winder.
4—Waterville Grinders.
1—36" Waldron Reeling Machine.
1—39" Dampening Machine.
1—36" Brush Coating Machine.
1—Copper Mixing Tank with agitator—40 gal.
1—Cast Iron Kettle 20" x 24" 2 outlets.

CONVEYOR
1—Standard Conveyor 30' long on wheels for handling bales of pulp. Direct connected to 5 h.p. motor.

DRYERS
4—60" diameter x 174" face framed and geared.
1—36" diameter x 102" face with bearings.
19—36" diam. x 68" face—2 deck frames, gears, bearings, etc.
40—36" diam. 86" face 3 deck frames.
18—36" diam. 82" face 2 deck frames.
40—28" diam. 96" face 2 deck frames.

FESTOON DRYERS
100" Proctor & Schwartz
60" Proctor & Schwartz

FLAT SCREENS
1—Moore & White 8 Plate.
1—Moore & White 10 Plate.
2—Sandy Hill Packer 8 Plate Scrapers.
1—Sandy Hill Packer 10 Plate.
1—Trimbey Pulp Screen 30 ton cap.

JORDANS
1—Dillon No. 2 Motor drive.
1—Appleton No. 2 motor drive.

KNIFE GRINDER
1—72" Seybold automatic used one year.

MISCELLANEOUS
1000—Cameron slightly used Slitter Knives—$1.00 each. Purchased from a war cancellation.
1—Warren Broke Target with pump.
2—Yankee Dryer doctor oscillators (Beloit)
2—Nugeat Oil Filters (new).
2—Beloit Fourdrinier Shakes.

MOTORS
5—1000 h.p. motors, 2300 volts with all controls.
1—30 h.p. 600 R.P.M. 2300 V. 3 Ph. 60 cy.
1—40 h.p. 3600 R.P.M. 2300 V. 3 Ph. 60 cy.

PLATERS
2—Holyoke 2 Roll 18" dia. 36" face.

PULLEYS
185—Cone Lift and Solid Cast Iron Pulleys. *Various Sizes.*

PULP EQUIPMENT
Complete Ground Wood Mill—
5—Sandy Hill four pocket Grinders. Each direct connected to 1000 h.p. motor, 2300 volts. 27" stones. Spare stones, etc. Excellent condition. Will sell all or part.
2—Pusey & Jones vertical Digesters (welded) 7' dia., 24' high 125 lb. pressure.
8—Horizontal Digesters 15' diam. 47' face 150 lb. pressure.
3—Improved No. 2 Knotters.
1—Nichols-Herreshoff Lime Kiln.
1—Williams No. 30 Bark Hog.
1—Sumner Disc Barker 72" dia.
1—36" Bauer Bros. Single Revolving Disc Mill. Direct connected to 50 h.p. motor, 3 phase, 60 cycles, 220 volts, 1160 r.p.m.

PULPERS
1—E. D. Jones direct connected to 60 h.p. motor with starting equipment.
1—Sturtevant Bale Pulper with conveyor & motors used three years.
1—Voith Pulper No. 1-20 tons cap.

PUMPS
1—Frederick 400 g.p.m.—60' head.
1—Pusey & Jones 5" x 8" Stock.
1—DeLaval 6" x 6".
1—Oliziti Acid 3" Suction.
1—Frederick 600 g.p.m. 50' head (stock).
1—Midwest 6" stock pump.

REELS
2—Pusey & Jones 104" face 18" dia. bowls.
1—Pusey & Jones 115" face 18" dia. bowls.
1—2-bowl 100" face 20" dia. bowls.

REFINER
1—10" Wiener Refiner with Regulating Valves.

RIGHT ANGLE WORM GEAR DRIVES
1—Cleveland 2 H. P.—10 to 1 ratio.
1—Philadelphia 15 H. P.—60 to 1 ratio.
1—Oliver 5 H. P.—51 to 1 ratio.
1—Grant 2 H. P.—3¾ to 1 ratio.
1—Cleveland 2.3 H. P.—40 to 1 ratio.
1—Cleveland 1.2 H. P.—60 to 1 ratio.
1—Grant 2 H. P.—7 to 1 ratio.
1—Philadelphia 2 H. P.—600 to 1 ratio.
1—Philadelphia 15 H. P.—60 to 1 ratio.

ROLLS
315—Table, Dress, Felt, Wire, Breast and Calender Rolls. *Various Sizes.*

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1—Guyton-Cumfer 5 gates.

SAVEALLS
1—A. D. Wood cylinder 48" dia. 60" face.
1—Dorr Company #40 ADKA Saveall 340—440 DPM. Used 1 month.
1—Dorr Company #50 ADKA Saveall 550—680 DPM. Used 1 month.
1—No. 4 Bird with motor and speed reducer 16" diam. rubber couch.

SCREW PRESS
1—Valley Iron Screw Press. Used 2 years.

SHEET CUTTER
120" Hamblet Duplex with layboy and 24 roll backstand.

SLITTERS & WINDERS
1—104" Warren two drum.
1—72" Pusey & Jones two drum.

STOKERS
2—Iron Fireman Pneumatic Spreader Stokers for two—300 h.p. boilers. Complete with undergrates, fans, sly ash fans, weight lory, portable car unloader. All direct connected to motors with starters. Used 1 year.

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1—12" x 12" Goulds triplex.
8—10" x 20" Shartle triplex.
1—8" x 18" Shartle triplex.
1—12" x 16" Shartle triplex.
1—8" x 10" Shartle triplex.
1—7" x 16" Shartle triplex.
1—8" x 18" Shartle duplex.

THICKENER
1—Shartle Bros. Thickener. Cylinder Mold 72" face x 36" diameter with 16" diameter couch.

TRIMMERS
1—65" Oswego Trimmer with motor.
2—56" Smith & Winchester Undercut with motor.

TURBINES
1—Westinghouse Turbine Generator 3125 KVA—600 volts—3 phase—60 cycle—30 lb. back pressure.
1—General Electric Turbine Paper Machine Drive. 250 h.p.—350 r.p.m. 125 lb. steam pressure.

TWISTING MACHINES
1—36 Spindle Brownell Twister with motor.

UNWINDERS
1—52" Johnstone Uniform Tension Unwinder with auto, hydraulic brakes. Used 6 months.
1—42" John Waldron Unwinder. Used 1 year.

VACUUM PUMPS
1—14" x 20" Connersville.
1—12" x 18" Connersville.

WASHERS (Beaters)
1—54" face—45" diam. with rigging.
1—52" face—52" diam. with rigging.

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1—A. D. Cook 100 g.p.m. 175' head, 70 feet in well 6" drop in pipe—5¾" bronze double acting cylinder. Direct connected to 10 h.p. motor.

YANKEE DRYER
1—Beloit 186" face 12' diameter with Messinger Bearings.

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1 completely rebuilt Rubber Covered Downingtown Suction Press Roll—24" dia x 92" drilled face—practically new.

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1—17-3C Mitts Merrill Hog or Shreader, practically new.
2—Crouse portable Barkers or Rossers, new in 1943, capacity 1¼ cord spruce or balsam per hour. Several sets extra knives.
1—Impco Ground Wood Screen complete with 2 sets bronze plates.

All above reconditioned and guaranteed
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Fulton, N. Y. N-1

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FOR SALE—1 Hamilton-Corliss Variable Speed Twin Engine, size of cylinders 12" x 24" Also Triple-Deck Frames for ninety 36" dryers. any width. The Chesapeake Paperboard Co., Baltimore, 30, Md. TF

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FOR SALE

Several Iron tub beaters used only few months. Rolls 80″ diameter x 55″ wide. Tubs 38′-4⅝″ long inside. Hollow midfeather. Anti-friction bearings. Pulleys 96 x 21. Two washers each. Excellent for straw, rag half stock, clearing up old papers, etc. Drawings available.

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Middletown, Ohio N-22

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1—Lobdell Roll Grinder will take rolls 20″ dia. 120″ face, complete with crowning attachment, excellent condition and priced so a small mill can afford it.
1—Lobdell Roll Grinder will take rolls 24″ dia. 160″ face, designed for driving grinding wheels with individual motors. Attractively priced.

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Fulton, N. Y. N-1

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1—Pulper with capacity of 1000# per batch. This unit is practically new and would make excellent unit for small mill, or pulper for broke in large mill, capacity about 20 tons daily.

1—36″ x 84″ Pulp Thickener or Saveall. All metal vat.

12—Bronze Screen Plates cut .024, with beveled edge for witham fasteners.

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1—84″ Appleton Machine Company Wet Machine. New Vat, two presses, two suction boxes and new rolls.

This machine is practically new.

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Hamblet Sheeter 70 to 75″ with roll stand and lay-boy.

Give age, condition and location in reply.

Address reply to Box No. 45-702, c/o Paper Trade Journal. N-15

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Scott Quadruple Effect Evaporator, 2500 sq. ft. each effect, vertical steel tubes; 40—Agitator Headers for Tanks from 10′ to 22′ dia.; 15—Centrifugal Pumps, from 2″ to 8″; 50—Motors, 10 to 150 HP, 3/60/440 volt, 490 to 860 RPM; 3—Rotary Kilns, 6′ x 60′, 9′ x 70′; Steel bins; Belt Conveyors; Tanks; Bucket Elevators; Pipe; Shafting; etc. Located near Pittsburgh, Pa. Full list upon request.

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Shartle Brothers Machine Co.
Shenango-Penn Mold Co.
SKF Industries Inc.
Timken Roller Bearing Co.
Valley Iron Works Co.
T. B. Woods' Sons Company

BEATERS & JORDANS
The Appleton Machine Co.
Black-Clawson Company
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Norman Mfg. Co.
E. D. Jones & Sons Co.
Noble & Wood Machine Co.
J. J. Ross Company
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works

BED PLATES
Bahr Brothers Mfg. Co.
Dilts Machine Works Inc.
Downingtown Mfg. Co.
Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Noble & Wood Machine Co.
Shartle Brothers Machine Co.
Simonds Worden White Co.
Valley Iron Works Co.

BELTING
Allis-Chalmers Mfg. Co.
The Cincinnati Rubber Mfg. Co.
Graton & Knight Company
The Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc.
J. E. Rhoads & Sons
United States Rubber Co.
T. B. Wood's Sons Company
Worthington Pump & Machinery Corp.

BLEACHING APPARATUS
Improved Paper Machy. Corp.
E. D. Jones & Sons Co.
Perkins & Son, Inc., B. F.
Moore & White Co.
Niagara Alkali Co.
Noble & Wood Machine Co.
Pennsylvania Salt Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

BLOW PIPES & PITS
Montague Machine Co.
Moore & White Co.
Murray Mfg. Co., D. J.
Walworth Company

BOTTOMS
Harrington & King Perforating Co.
Kalamazoo Tank & Silo Co.
Valley Iron Works Co.

BUILDERS—PAPER MILLS
Merritt-Chapman & Scott Corp.

CALENDERS
Downingtown Mfg. Co.
Farrel-Birmingham Co., Inc.
Lobdell Car Wheel Co.
Moore & White Co.
Black-Clawson Company
Perkins & Son, Inc., B. F.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works
Waldron Corp., John

CASEIN
Packing Products Co.

CASTINGS
Appleton Machine Co.
Black-Clawson Company
Dilts Machine Works
Downingtown Mfg. Co.
Farrel-Birmingham Co.
Fort Pitt Steel Casting Co., Div. H. K. Porter Company, Inc.
The Frederick Iron & Steel Co.
Grinnel Company
Hamblet Machine Co.
E. D. Jones & Sons Co.
Lobdell Car Wheel Co.
Magnus Metal Corp.
Montague Machine Co.
Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Shenango-Penn Mold Co.
Smith & Winchester Mfg. Co.
Union Machine Company
Union Screen Plate Co.
Valley Iron Works Co.
Walworth Company

CENTRIFUGAL MACHINERY
Bird Machine Co.
De Laval Steam Turbine Co.
Nichols Engrg. & Research Corp.
Ross J. O. Eng. Co.
Shartle Brothers Machine Co.

CHEMICALS
Amer. Cyanamid & Chem. Corp.
American Resinous Chemicals Corp.
Ansul Chemical Co.
Calco Chemical Co.
Diamond Alkali o.
Dispersion Process Inc.
Dow Chemical Company
E. I. du Pont de Nemours & Co., Inc.
General Dyestuff Corp.
Geigy Co., Inc.
Gottesman & Co.
Glidden Corp.
Hooker Electrochemical Company
The Mathieson Alkali Works, Inc.
Monsanto Chemical Company
National Oil Products Co.
Naugatuck Chemical Div. of U. S. Rubber Co.
Niagara Alkali Company
Paper Makers Chemical Department, Hercules Powder Co.
Pennsylvania Salt Mfg. Co.
Pioneer Salt Company
Pittsburgh Plate Glass Co., Columbia Chemical Division
Solvay Sales Corp.
Stauffer Chemical Company
United States Rubber Co.
Witco Chemical Co.
Wyandotte Chemicals Corp.

CLEANING MATERIALS
Amer. Cyanamid & Chem. Corp.
Bird Machine Co.
E. I. du Pont de Nemours & Co., Inc.
Paper Makers Chemical Department, Hercules Powder Co.
Magnus Chemical Co.
Nichols Engrg. & Research Corp.
Oakite Products, Inc.
Pennsylvania Salt Mfg. Co.
Philadelphia Quartz Co.
Pittsburgh Plate Glass Co., Columbia Chemical Division
Solvay Sales Corp.
Wyandotte Chemicals Corp.
J. B. Ford Division

CLUTCHES
Appleton Machine Co.
Black-Clawson Company
Hudson Sharp Machine Company
Farrel-Birmingham Co.
Fawick Airflex Co., Inc.
Horton Manufacturing Co.
Rodney Hunt Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
Stearns Magnetic Mfg. Co.
Valley Iron Works Co.
T. B. Wood's Sons Company

COATING MATERIAL
Glidden Corp.

COATING MACHINERY
Horton Mfg. Co.
Hudson Sharp Machine Company
Moore & White Co.
Potdevin Machine Co.
Rotogravure Engrg. Co.
Shartle Brothers Machine Co.
Waldron Corporation, John
Weber, Herman G.

COMPRESSORS
Allis-Chalmers Mfg. Co.
De Laval Steam Turbine Co.
Ingersoll-Rand Co.
Nash Engineering Co.
Worthington Pump & Machinery Corp.

CONSTRUCTION ENGINEERS
Merritt-Chapman & Scott Corp.

CONSULTING ENGINEERS
W. H. L. D. Betz
Frederic C. Clark
Ferguson, Hardy S.
Hardy, George P.
Johnson & Wierk, Inc.
The Kohler System Company
Main, Inc., Chas. T.
J. E. Sirrine & Co.
Stone & Webster Engrg. Corp.

CONTROLS
The Bristol Company
Stickle Steam Specialties Co.

CONVEYORS
Black-Clawson Company
Murray, D. J. Mfg. Co.
Ross Engineering Corp., J. O.

CORES
Flixman Paper Co.
Senoco Products Co.
Rodney Hunt Machine Co.
Montague Machine Co.
Smith & Winchester Mfg. Co.
Walker-Goulard-Plohn Co.

COUPLINGS
Black-Clawson Company
De Laval Steam Turbine Co.
Farrel-Birmingham Co., Inc.
The Frederick Iron & Steel
E. D. Jones & Sons Co.
Lovejoy Flexible Coupling Co.
Moore & White Co.
Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works
Waldron Corp., John
Westinghouse Electric Corporation
T. B. Wood's Sons Company

CRANES
Northwest Engrg. Co.

CUTTERS
Thomas W. Hall Co.
Noble & Wood Mach. Co.
Perkins & Son, Inc., B. F.
The Smith & Winchester Mfg. Co.
Taylor Stiles & Co.

DAMPENERS
Perkins & Son, Inc., B. F.
Valley Iron Works Co.

DE-INKING
Kinsley Chemical Co.

DIGESTERS
H. K. Porter Company Inc.
Pusey & Jones Corp.

DOCTORS
Bird Machine Company
Black-Clawson Company
Downingtown Mfg. Co.
Lobdell Co.
Montague Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DOCTOR BLADES
Black-Clawson Company
The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.
Montague Machine Co.
Rotogravure Engrg. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers
United States Rubber Co.
Westinghouse Electric Corporation

DRIERS
Black-Clawson Company
Murray Mfg. Co., D. J.
J. J. Ross Company
Ross, J. O. Engineering Corp.
Rotogravure Engrg. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.
Waldron Corp., John

DRIVES
Allis-Chalmers Mfg. Co.
Appleton Machine Co.
Bird Machine Co.
Black-Clawson Company
Davis, Frank H., Co.
De Laval Steam Turbine Co
Dilts Machine Works
Downingtown Mfg. Co.
Farrel-Birmingham Co.
General Electric Company
Horton Manufacturing Co.
Rodney Hunt Machine Co.
Montague Machine Co.
Moore & White Co.
Murray, D. J. Mfg. Co.
Noble & Wood Machine Co.
Pusey & Jones Corp.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
T. B. Wood's Sons Co.
Valley Iron Works Co.
Westinghouse Electric Corporation

DUSTERS
Appleton Machine Co.
Downingtown Mfg. Co.
Fibre Making Processes, Inc.
E. D. Jones & Son Co.
Moore & White Co.
Noble & Wood Machine Co.
Norwood Engrg. Co.
D. J. Murray Mfg. Co.

DYESTUFFS
Calco Chemical Co.
Ciba Company
E. I. du Pont de Nemours & Co.
Geigy Co., The
General Dyestuff Corp.
National Aniline Division, Allied Chemical & Dye Corp.
Paper Makers Chemical Department, Hercules Powder Co.
C. K. Williams & Co.
Witco Chemical Co.

EQUIPMENT INSTALLATION
Merritt-Chapman & Scott Corp.

EVAPORATORS
Black-Clawson Company
Goslin-Birmingham Mfg. Co., Inc.
Murray, D. J., Mfg. Co.
Swenson Evaporator Co., Div. of Whiting Corp.

FANS
General Electric Co.
B. F. Perkins & Son, Inc.
Ross Engineering Co., J. O.

FEEDERS
Builders-Providence, Inc.
Merrick Scale Mfg. Co.
Leeds & Northrup
Wallace & Tiernan

FELTS
Appleton Woolen Mills
Asten-Hill Mfg. Co.
Bloomfield Woolen Co.
Bulkley, Dunton Pulp Co. Inc.
Draper Bros. Corp.
Huyck & Son, F. C.
Lockport Felt Co.
Mt. Vernon-Woodbury Mills, Inc.
Morey Paper Mill Supply Co.
Orr Felt & Blanket Co.
Shuler & Benninghofen
Waterbury Felt Co.
Woodward, Baldwin & Co.

FELT GUIDES
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

FILLERS
American Colloid Co.
Amer. Cyanamid & Chem. Corp.
American Resinous Chemicals Corp.
W. H. Loomis Talc Corp.
Vanderbilt Co., R. T.
Witco Chemical Co.

FILTERS
Moore & White Co.
J. O. Ross Engrg. Corp.
Worthington Pump & Mchy. Corp.
Witco Chemical Co.

FLOORING, GRATING & TREADS
Hendrick Mfg. Co.
Norton Co.
Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc.
United States Rubber Co.

FORMING MACHINES
Downingtown Mfg. Co.
Noble & Wood Machine Co.
Oliver United Filters
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

GEARS
Black-Clawson Company
De Laval Steam Turbine Co.
Downingtown Mfg. Co.
Farrel-Birmingham Co.
E. D. Jones & Sons Co.
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

WHERE TO BUY

Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

GRINDERS
Farrel-Birmingham Co.
Lobdell Car Wheel Co.
Montague Machine Co.
Norton Company
Samuel C. Rogers and Company
The Sandy Hill Iron & Brass Works

GRINDING WHEELS
The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.
Norton Company
Simonds Worden White Co.
United States Rubber Co.

HEATING, VENTILATING AND AIR CONDITIONING
The Appleton Machine Co.
Armstrong Machine Works
Fibre Making Processes, Inc.
E. D. Jones & Sons Co.
General Electric Co.
Grinnell Company
Leeds & Northrup
Noble & Wood Machine Co.
Rose Engineering Corp., J. O.
Shartle Brothers Machine Co.
Stickle Steam Specialties Co.
Valley Iron Works Co.
Worthington Pump & Mchy Corp.

HOISTS
Appleton Machine Co.
Dilts Machine Works
Rodney Hunt Machine Co.
Ingersoll-Rand Co.
E. D. Jones & Sons Co.

HOSE (Air, Water, Suction, etc.)
The Cincinnati Rubber Mfg. Co.
The Manhattan Rubber Manufacturing Division of Raybestos-Manhattan Inc.
United States Rubber Co.

HUMIDITY CONTROL
Steamaire Company

INSTRUMENTS, TESTING AND MEASURING
W. H. & L. D. Betz
N. P. Bowsher
The Bristol Company
Builders-Providence, Inc.
The Foxboro Company
General Electric
W. & L. E. Gurley
Leeds & Northrup Company
National Technical Laboratories
B. F. Perkins & Son
Taber Instrument Corp.
Taylor Instrument Cos
Thwing-Albert Instrument Co.
Wallace & Tiernan Co., Inc.

JORDAN FILLINGS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
E. D. Jones & Sons Co.
Noble & Wood Machine Co
Shartle Brothers Machine Co
Smith & Winchester Mfg. Co
Valley Iron Works Co.

KNIVES
Black-Clawson Company
Dilts Machine Works, Inc.
Hamblet Machine Co.
E. D. Jones & Sons Co.
Simonds Worden White Co
Valley Iron Works Co.

LABORATORY EQUIPMENT
Appleton Machine Co.
W. H. & L. D. Betz
Dilts Machine Works
E. D. Jones & Sons Co.
Leeds & Northrup Company
National Technical Laboratories
Noble & Wood Machine Co
Taber Instrument Co.
Taylor Instrument Companies
Valley Iron Works Co.

LAY BOYS
Hamblet Machine Co.
Moore & White Co.
Shartle Brothers

LUBRICANTS
Gulf Oil Corporation
Gulf Refining Co.
Sinclair Refining Co.
Socony-Vacuum Oil Co., Inc.
Sun Oil Company
The Texas Company
Tide Water Associated Oil Co.

LUBRICATORS
Hills-McCanna Co.

MATERIAL HANDLING
Northwest Engrg. Co.

MICROMETERS & CALIPERS
Farrel-Birmingham Co.
Montague Machine Co.
Lobdell Car Wheel Co.
Walker-Goulard-Plehn Co.

MIXERS
H. K. Porter Company
Youngstown Welding & Engrg. Co.

MOISTENING EQUIPMENT
The Spray Engineering Co.

MOISTURE CONTENT CONTROL
Steamaire Company

MOTORS AND GENERATORS
Allis-Chalmers Mfg. Co.
De Laval Steam Turbine Co.
General Electric Co.
Ingersoll-Rand Co.
Reliance Electric & Engrg. Co.
Westinghouse Electric Corporation

PACKING BOXES
Johnson Corporation
Shartle Brothers Machine Co.

PACKING
The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.
United States Rubber Co.

PAPER MACHINES
Black-Clawson Company
Downingtown Mfg. Co.
Thomas W. Hall Co.
Moore & White Co.
Pusey & Jones
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester

PAPER MACHINE SLICES
Black-Clawson Company
E. D. Jones & Sons Co.
Montague Machine Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

PAPERMILL BUILDERS
Merritt Chapman & Scott Corp.

PAPER TUBE MACHINERY
Dietz Machine Works
Thomas W. Hall Co.
Hudson Sharp Machine Company
Langston Co., Samuel M.

PASTING MACHINES
Black-Clawson Company
Davis, Frank H., Co.
Murray, D. J., Mfg. Co.
Moore & White Co.
Pondevin Machine Co.
Shartle Brothers Machine Co
Waldron Corp., John

PERFORATED METAL
Allis-Chalmers Mfg. Co.
Harrington & King Perforating Co
Hendrick Mfg. Co.

PIPE
Black-Clawson Company
Crane Company
Grinnell Company
Shartle Brothers Machine Co
Stowe-Woodward Inc.
Taylor Forge & Pipe Works
Walworth Company
Youngstown Welding & Engrg. Co

PLATERS
Perkins & Son, Inc., B. F.

PLATES
Black-Clawson Company
Headrick Mfg. Co.
J. O. Ross Engrg. Corp.
Shartle Brothers Machine Co
Timken Roller Bearing Co.

PLUGS
Black-Clawson Company
E. D. Jones & Sons Co.
The Noble & Wood Machine Co.
Shartle Brothers Machine Co.

PRESSES
Black-Clawson Company
Farrel-Birmingham Co.
Dietz Machine Wks.
Thomas W. Hall Co.
Hudson-Sharp Machine Co.
Paper Converting Machine Co., Inc.
Pondevin Machine Co.
Rotogravure Engineering Co.
Shartle Brothers
Valley Iron Works Co.
Waldron Corp., John
Weber, Homer C.

PUG MILLS
Traylor Engineering & Mfg. Co.

PULPS
Andersen Co., J.
Bulkley, Dunton Pulp Co., Inc.
Gottesman & Co., Inc.
Hof Hanson, Inc.
Perkins-Goodwin Co.
Price & Pierce, Ltd.
Pulp and Paper Trading Co.

PULPSTONES
Norton Company

PUMPS
Allis-Chalmers Mfg. Co.
Black-Clawson Company
Dorr Company
Downingtown Mfg. Co.
De Laval Steam Turbine Co
Hills-McCanna Co.
Ingersoll-Rand Co.
Johnson Corp.
Moore & White Co.
Nash Engineering Co.
Noble & Wood Machine Co.
Paper Converting Mch. Co.
Quimby Pump Co. Div. of H. K. Porter Company, Inc.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Steamaire Company
Warren Steam Pump Company
Worthington Pump & Machinery Corp.

RECOVERY SYSTEMS
Bulkley, Dunton Pulp Co., Inc.
Rodney Hunt Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Pusey & Jones
Rose Engineering Corp. J. O.
Valley Iron Works Co.

REELS
Black-Clawson Company
Downingtown Mfg. Co.
De Laval Steam Turbine Co.
Hudson Sharp Machine Company
The Kohler System Company
Montague Machine Co.
Moore & White Co.
Paper Converting Mch. Co.
Rodney Hunt Machine Co.
Rotogravure Engrg. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
The Smith & Winchester Mfg. Co

REFINERS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
Bauer Brothers Co.
Dilts Machine Works
The Hermann Manufacturing Co
E. D. Jones & Sons Co.
Murray, D. J. Mfg. Co.
Noble & Wood Machine Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Sprout, Waldron & Co.
Sutherland Refiner Corp.
Valley Iron Works

REGULATORS
Allis-Chalmers Mfg. Co.
Armstrong Machine Works
Bird Machine Company
The Bristol Company
The Brown Instrument Co.
The Foxboro Company
Jones, E. D., & Sons Co.
General Electric Co.
Johnson Corp.
Leeds & Northrup Company
National Technical Laboratories
Noble & Wood Machine Co.
Shartle Brothers
Stickle Steam Specialties Co.
Taylor Instrument Companies
Wallace & Tiernan
Westinghouse Electric Corporation

RESINS
American Cyanamid & Chemical Corp.
American Resinous Chemicals Corp.
Glidden Corp.
The Resinous Products & Chemical Co.

ROLLS
Appleton Machine Co.
Black-Clawson Company
Downingtown Mfg. Co.
Farrel-Birmingham Co.
Improved Paper Machy. Corp.
Loebell Co.
The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.
Montague Machine Co.
D. J. Murray Mfg. Co.
Noble & Wood Machine Co.
Perkins, B. F., & Sons Co.
Pusey & Jones Corp.
Roehlen Engraving Co.
J. J. Ross Company
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Shenango-Penn Mold Co.
Sinclair Co.
Smith & Winchester Mfg. Co.
Stearns Magnetic Mfg. Co.
Stowe-Woodward Inc.
United States Rubber Co.
Valley Iron Works Co.
Waldron Corp., John

ROLL COVERS
The Cincinnati Rubber Mfg. Co.
Stowe-Woodward Inc.
Youngstown Welding & Engrg. Co.

ROLL STANDS
Cameron Machine Co.
Johnstone Eng. & Machine Co.
The Kohler System Company
Moore & White Co.
Pondevin Machine Co.
Rotogravure Engrg. Co.
Shartle Brothers Machine Co.

ROTARY KILNS
Traylor Engineering & Mfg. Co.

SATURATING MACHINES
Black-Clawson Company
Moore & White Co.
Noble & Wood Machine Co.
Pondevin Machine Co.
Rotogravure Engrg. Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman C.

SCALES
Builders-Providence, Inc.
Merrick Scale Mfg. Co.

SCREEN PLATES
Fitchburg Screen Plate Co.
Magnus Metal Corp.
Morey Paper Mill Supply Co.
Union Machine Co.
Union Screen Plate Co.

SCREENS
Allis-Chalmers Mfg. Co.
Appleton Wire Works
Appleton Machine Co.
Bird Machine Company
Carthage Machine Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Harrington & King Perforating Co.
Hendrick Manufacturing Co.
E. D. Jones & Sons Co.
Montague Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

SCRUBBERS
Traylor Engineering & Mfg. Co.

SHEET MACHINES
Thomas W. Hall Co.
The Hermann Manufacturing Co.
Noble & Wood Machine Co.
Rotogravure Engrg. Co.
Valley Iron Works Co.

SHOWER PIPES
Bird Machine Company
A. E. Broughton & Co.
Downingtown Mfg. Co.
Improved Paper Machy. Corp.
Moore & White Co.
Shartle Bros. Mach. Co.
Smith & Winchester Mfg. Co.

SHREDDERS
Bauer Brothers Co.
Carthage Machine Co.

SIZING
American Cyanamid & Chemical Co
American Resinous Chemicals Corp.
Black-Clawson Company
The Dow Chemical Co.
du Pont, E. I., de Nemours & Co.
Glidden Company, Soya Products Div.
National Oil Products Co.
Paper Makers Chemical Department Hercules Powder Co.
Philadelphia Quartz Co.
Pioneer Salt Company
Socony-Vacuum Co.
Stein, Hall & Co., Inc.

SLITTERS
Black-Clawson Company
Cameron Machine Co.
Carthage Machine Co.
Dietz Machine Works
Downingtown Mfg. Co.
Thomas W. Hall Co., Inc.
Hamblet Machine Co.
Hudson Sharp Machine Company
Johnstone Eng. & Machine Co.
Langston Co., Samuel M.
Moore & White Co.
D. J. Murray Mfg. Co.
Pondevin Machine Co.
Rotogravure Engrg. Co.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

SOLENOID VALVES
Steamaire Company

SPRAY NOZZLES
The Spray Engineering Co.

STAINLESS STEEL
Allegheny Ludlum Steel Co.
Eastern Stainless Steel Corp.
Industrial Steels, Inc.

STARCH
American Cyanamid & Chemical Corp.
Clinton Co.
National Starch Products, Inc.
Stein, Hall & Co., Inc.

WHERE TO BUY

STEAM SPECIALTIES
Johnson Corp.
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

STRAPPING & STRAPPING MACHINES
Acme Steel Company
The Stanley Works

STUFF CHESTS
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

SUCTION BOXES
Black-Clawson Company
A. E. Broughton & Co.
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Westinghouse Electric Corp.

SULPHUR
American Cyanamid & Chemical Corp.
Beaufor Chemical Company
Texas Gulf Sulphur Co.
Witco Chemical Company

SULPHUR BURNERS
Valley Iron Works Co.

SULPHUR DIOXIDE
Ansul Chemical Company

TALC
American Cyanamid & Chemical Corp.
W. H. Loomis Talc Corp.
International Talc Company

TANKS
Frederick Mfg. Co.
E. D. Jones & Sons Co.
Kalamazoo Tank & Silo Co.
The Mechanical Rubber Mfg. Division of Raybestos-Manhattan, Inc.
The Noble & Wood Machine Co.
H. K. Porter Company Inc.
Rodney Hunt
J. O. Ross Engrg. Corp.
Shartle Brothers Machine Co.
Stowe-Woodward Inc.
United States Rubber Co.
Waldron Corp., John
Youngstown Welding & Engrg. Co.

THICKENERS, DECKERS & SAVEALLS
Bird Machine Company
Bulkley, Dunton Pulp Co. Inc.
Carthage Machine Co.
Dilts Machine Works
Dorr Co.
Downingtown Mfg. Co.
Montague Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

TITANIUM
E. I. Du Pont de Nemours & Co.
Titanium Pigment Co.
R. T. Vanderbilt Co.
Witco Chemical Company

TOOLS
Acme Steel Company
Ingersoll-Rand Co.
The Stanley Works
Walworth Company

TRUCKS
Automatic Transportation Co.
Elwell Parker Electric Co.

TRAPS
Armstrong Machine Works
Crane Co.
Grinnel Company
Johnson Corporation
Shartle Bros. Mch. Co.

TUBS
Rodney Hunt Machine Co.
Noble & Wood Machine Co.
Shartle Brothers
Valley Iron Works Co.

TURBINES
Allis-Chalmers Mfg. Co.
De Laval Steam Turbine Co.
General Electric Company
Hunt, Rodney, Mach. Co.
Westinghouse Electric Corp.
Worthington Pump & Machinery Corp.

USED EQUIPMENT
Frank H. Davis Company
Gibbs-Brower Co.
Thomas W. Hall Co.
Noble & Wood Machine Co.
Rotogravure Engrg. Co.
J. J. Ross Company
Shartle Brothers Machine Co.

VALVES
The Bristol Company
Crane Company
Dilts Machine Works
Fibre Making Processes, Inc.
The Foxboro Company
Hills-McCanna Co.
E. D. Jones & Sons Co.
Kennedy Valve Mfg. Co.
Magnus Metal Corp.
D. J. Murray Mfg. Co.
Noble & Wood Machine Co.
The Permutit Company
William Powell Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Stickle Steam Specialties Co.
Taylor Instrument Companies
Valley Iron Works Co.
Walworth Company

VATS & VAT PARTS
Union Machine Co.
Union Screen Plate Co.

WASHERS
Bird Machine Company
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Works
Rodney Hunt Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

WATER CONDITIONING
The Permutit Company

WAXING MACHINERY
Black-Clawson Co.
Potdevin Machine Co.
Rotogravure Engrg. Co.
Shartle Brothers Machine Co.
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Weber, Herman H.

WELDING EQUIPMENT
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Walworth Company
Westinghouse Electric Corp.

WET MACHINES
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Carthage Machine Co.
Downingtown Mfg. Co.
Moore & White Co.
Montague Machine Co.
Noble & Wood Machine Co.
Pusey & Jones Corp.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

WINDERS AND REWINDERS
Black-Clawson Company
Cameron Machine Co.
Dietz Machine Works
Downingtown Mfg. Co.
Thomas W. Hall Co.
Hudson-Sharp Mach. Co.
Langston Co., Samuel M.
Johnstone Eng. & Machine Co.
The Kohler System Company
Montague Machine Co.
Moore & White Co.
Paper Converting Mch. Co.
Potdevin Machine Co.
Pusey & Jones Corp.
Rotogravure Engrg. Co.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Waldron Corp., John

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